

Geology, Total-Field Magnetometry and  
Gradiometry of Wanda Claims, Coal Harbour  
Area, Northern Vancouver Island

Nanaimo Mining Division

NTS 92 L/12 E & W

Lat.  $50^{\circ}37'$  Long.  $127^{\circ}45'$

Owner-Operator: B.D.Pearson, P.Eng.

Author of Report: B.D.Pearson, P.Eng. and  
Robert W.St.John, P.Geophys.

Dated: March 22, 1984

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

12,302

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Gradiometer Printouts (Index overleaf) In pocket

Index of Magnetometer and Gradiometer

Printouts \*

March 3, 1984 (Printout #1)

Delta Rock Pit

L. 40 west

L. 36 west

L. 32 west

L. 28 west

L. 24 west

L. 20 west

L. 16 west

L. 12 west

L. 8 west

L. 4 west

L. 0 west

L. 4 east

L. 8 east

L. 12 east

L. 16 east

March 4, 1984 (Printout #2)

Wanokana Main, Segment 1

Pemberton Main, Segment 1

Pemberton D-1

Pemberton Main E

Pemberton E-1

\* Note: Each day's printout is in two sections, the first a display of data uncorrected for diurnal variations, signified by an asterisk after each magnetic field reading, and the second a display with all magnetic field readings corrected for such variations.

March 6, 1984 (Printout #3)

Base line  
Pemberton 400  
Pemberton 400 Ext.  
Pemberton 500  
Pemberton 502  
Pemberton 510

March 7, 1984 (Printout #4)

Delta Pit Line 0  
Base line  
Pemberton Main C  
Pemberton Main B  
Pemberton Main B-2  
Pemberton Main A  
Pemberton 200  
Pemberton 300  
Wanokana Main, Segment 2  
Wanokana 1000  
Wanokana 1050  
Wanokana 1200

March 8, 1984 (Printout #5)

Base line  
Wanokana 1010  
Wanokana 902  
Wanokana 901  
Wanokana 901B  
Wanokana 901A  
Wanokana 900  
Wanokana Main, Segment 3



## Introduction

The Wanda Group of 68 claim units plus one fractional claim is centered 13 Km. west of Coal Harbour and 22 Km. southwest of Port Hardy on Northern Vancouver Island. It lies along the northern shore of Holberg Inlet and extends from the flats along the inlet up onto the crest of the Pemberton Hills to the north. Maximum elevation is 582 M. Except at the highest elevations, the claims are covered by a dense growth of mature timber consisting largely of cedar and hemlock, although logging carried out over the past several years and currently in progress is beginning to yield a number of relatively clear areas.

The history of the area was covered in detail in a report submitted March 22, 1982. Briefly, much of the ground had been staked by Utah Construction and Mining Company (now Utah Mines) during the fall and winter of 1967 - 1968. At that time access was by boat along Holberg Inlet, or by an extremely difficult overland slog south from the logging road between Port Hardy and Holberg. Much of Utah's work was carried out from helicopter-supported base camps within the area. That company carried out soil geochemistry, and locally, detailed geological mapping, vertical magnetic intensity surveys using a flux-gate type magnetometer, and, in the vicinity of the Wanokana delta, an induced polarization survey. The work is reported in assessment reports authored by Young, 1969, Clouthier, 1971 and Ascencios, 1973. The area has also been mapped on a regional scale by Muller, working for the G.S.C. and by Northcote, working for the B.C.D.M. See bibliography for details.

In recent years, an extensive network of logging roads has been developed in the area, initially by Rayonier, more recently by its successor company Western Forest Products. Our work has been aided by the easier access, and by the numerous rock pits developed for road fill, as well as the exposures of outcrop revealed by logging and slash-burning. We have also been assisted by the generosity of Western Forest Products in making available to us excellent topographic maps on a scale of 1 inch to 400 feet and more recently on scales of 1 to 5,000 and 1 to 15,000.

Field work covered in this report was carried out from March 1 through March 9, 1984 in excellent weather. It is notable that the entire claim group was completely free of snow, a highly unusual circumstance at this time of year.

The programme of work had several different thrusts. Pearson mapped outcrops exposed by recent logging road construction. He also carried out detailed mapping of several rock pits. Pearson and St. John collected one silt sample from a previously largely inaccessible site at the southern edge of the eastern-most of the Pemberton Hills. They also sampled four mineralized outcrop areas. St. John spent much of six days carrying out gradiometer and total-field magnetic surveys over a network of new logging roads and over one rock pit. From March 1 until March 8 we were joined by Dr. Jan Muller, now retired, but formerly with the G.S.C. Dr. Muller has mapped most of Vancouver Island on a regional scale over the past fifteen years. During his time with us

he concentrated on the regional mapping of the area between Hushamu Creek on the west and Coal Harbour on the east, in an effort to put the Wanda claims into a regional perspective and to assist us in trying to work out details of stratigraphy within the Bonanza Volcanics, and to learn more about their attitudes and structure. His work is not expensed in this report and may form the basis for a separate report to be submitted at a later date. His work was carried out largely along Western Forest Products road networks constructed since Muller's previous visits to the area, and was plotted on a base map supplied by Western Forest Products which was drawn on a scale of 1:15,000.

During the course of the detailed mapping carried out by Pearson, as reported herein, he collected numerous rock samples, the analysis and laboratory study of which will serve as the basis for a later report.

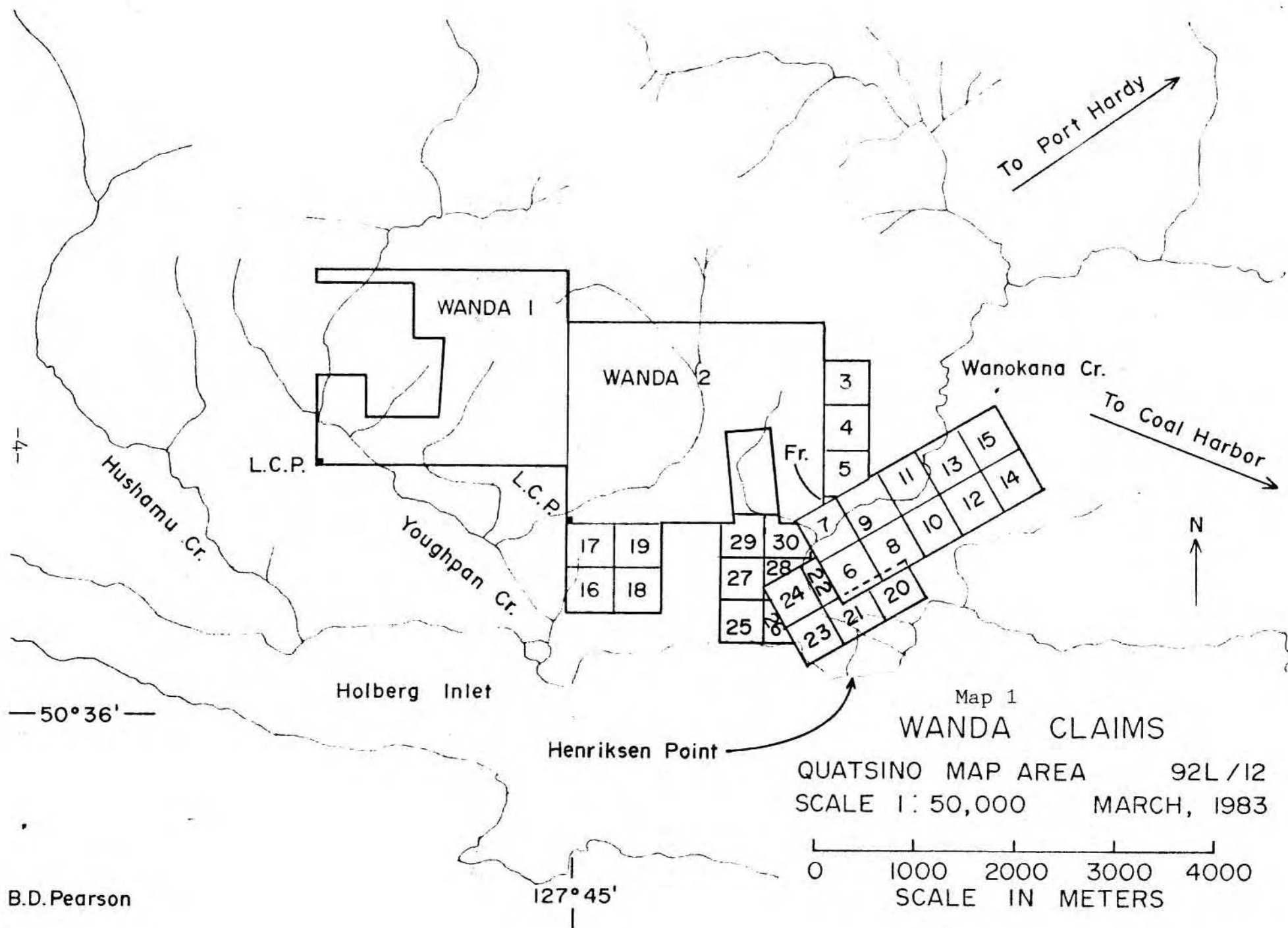


Table 1 Claim Record

<u>Claim Name and number</u>	<u>Record number</u>	<u>Number of units</u>
Wanda 1	1079(3)	20
" 2	1080(3)	20
" 3	1081(3)	1
" 4	1082(3)	1
" 5	1083(3)	1
" 6	1084(3)	1
" 7	1085(3)	1
" 8	1086(3)	1
" 9	1087(3)	1
" 10	1088(3)	1
" 11	1089(3)	1
" 12	1090(3)	1
" 13	1091(3)	1
" 14	1092(3)	1
" 15	1093(3)	1
" 16	1094(3)	1
" 17	1095(3)	1
" 18	1096(3)	1
" 19	1097(3)	1
" Fraction	1098(3)	Fraction

Owner: Bradford D. Pearson  
7431 Lindsay Road  
Richmond, B.C.  
V7C 3M7

Table 2 Claim Record

Additional Claims Acquired During Past Year

<u>Claim Name and number</u>	<u>Record number</u>	<u>Number of units</u>
Wanda 20	1473(6)	1
" 21	1474(6)	1
" 22	1475(6)	1
" 23	1476(6)	1
" 24	1477(6)	1
" 25	1478(6)	1
" 26	1479(6)	1
" 27	1480(6)	1
" 28	1481(6)	1
" 29	1482(6)	1
" 30	1483(6)	1

Table 3 Statistics of Work Done

Work has been carried out on the following claims:

Wanda 2, 6-10, 12-15, 20-23, 25-27 and 29.

Magnetometry and gradiometer studies have been carried out on all of the above listed claims. 14,872 line meters were covered at a station separation of 8.9 meters. 997 line meters were covered at a station separation of 1.78 meters.

One silt sample was collected from Wanda 2.

Geological mapping was carried out on the following claims:

Wanda 2, 6, 7, 12, 20, 21, 23, 25 and 26.

Approximately 40 rock samples were gathered from the following claims or their immediate periphery:

Wanda 2, 6, 7, 10, 21, 23, 25 and 26.

## Geological Mapping

Mapping was carried out by Pearson and St. John using as a base the 1:5,000 topographic maps supplied by Western Forest Products. Results are plotted on Map 2 of this report, which also shows the layout of the gradiometer lines and the claims boundaries. Detailed mapping carried out in two rock pits and along one section of road outcrop is displayed on Maps 4, 5, 6 and 7. It was carried out using pace and compass methods at a scale of 1:305.8 (approximately 25 feet to the inch).

Maps 4 and 5 display the geology of Delta rock pit, which is located immediately to the west of the delta of Wano-kana Creek. Map 3 shows the grid for the detailed gradiometer survey which was carried out in the pit. Rocks here consist of fault blocks of several different rock types, including a white, highly silicified tuffaceous and fragmental rock which contains a thin bed of conformable pyrite, evidently of sedimentary origin. There is an area of similar rock (though without bedded pyrite) about one kilometer to the northwest which we have not yet mapped in detail. Also present is a fault block of hematite-rich volcanic breccia which, according to Muller, is typical of Lower Bonanza rocks. Outcrops of similar material are found about 3 Km. to the west along the shore of Holberg Inlet. Attitudes noted within the silicified rocks of Delta rock pit indicate that the rocks strike slightly north of west, in accord with regional trends, and that they dip vertically. Alteration patterns in the vicinity of the sedimentary sulfide horizon lead us to believe that tops face to the north.



Maps 6 and 7 cover road outcrops along Wanokana Main and those in a rock pit immediately west of Wanokana Bridge, close to which we located our gradiometer base station. Here the rock is a light chalky green, extremely uniform massive fragmental believed to be an ignimbrite (Muller, personal communication). We were successful in finding a fossilized log within the unit. We could not, however, locate any directional characteristics which might allow us to determine attitudes. The only notable structures were joint sets trending Az.  $15^{\circ}$  and dipping vertically. A single dike of slightly amygdaloidal, fine-grained basalt was noted, with an attitude identical to those of the joint sets. The most conspicuous feature of the unit was the nature of the fragments, about 95% of which consisted of angular to highly irregular (almost shredded) clots of highly chloritized material, usually less than a cm. in size, but sometimes exceeding ten cm.

East of the Wanokana Bridge, no trace of the ignimbrite was noted. All outcrops are tuffaceous andesites (in a few cases andesitic lava) in various states of alteration. Propylitic alteration predominates, although advanced argillic alteration was noted on Wanokana Main within Wanda 20, and considerable silicification was noted within tuffs exposed in a rock pit north of Wanda 15. Petrographic work will be carried out on specimens gathered here in order to better define patterns of alteration.

## Gradiometer Survey

The gradiometer survey was carried out using instrumentation provided by Scintrex, Ltd., 222 Snidercroft Road, Concord, Ontario. It consisted of two MP-3 consoles, three detector heads, an Epson printer, a tripod for supporting the base station detector head, and a staff for deploying the two portable detector heads. Power was supplied by portable rechargeable battery packs which attached to the base of each console. In field use, the microprocessor-based console for the base station was set up approximately thirty meters from the tripod-mounted detector head and connected to it by cable. Total field readings were made every five seconds and stored in memory. Timing was carried out by an internal clock accurate to one second. The base station served to provide a record of diurnal variations in the total field.

The second microprocessor-based console was carried on the chest of the operator. It was connected to two detectors carried on a staff, these detectors separated from one another by a vertical distance of one meter. The lower detector was approximately two meters above ground level. Upon actuating the console, the instrument would make a reading using one detector, store that reading, two seconds later make a reading from the second detector, subtract it from the first reading and store the difference in memory, thus yielding both total field and gradient. Both values were assigned to coordinates assigned during initialization procedures at the start of the particular survey, and the time of the readings also stored in memory for later correlation with the base station. At the end of the day, the field console would be connected to the printer and a printout made of the entire day's uncorrected readings. If desired, plots of both total field and gradient could also be plotted with reference to lines in the coordinate system.

Following this procedure, the field console was connected to the base station console. The microprocessor circuitry sorted all data according to time of reading and corrected all field observations for diurnal variation, using interpolation techniques where necessary. A corrected printout could then be made.

Both consoles are tuned daily to the local field. The portable unit is corrected automatically to a datum established at the beginning of the overall survey. Tuning is carried out automatically in the portable console, in that the previous total field reading serves as the tune field for the succeeding reading. In the case of the base station, the automatic tuning feature is disabled, in case a bad reading occurs which might adversely affect the tuning for subsequent readings. In the case of the portable console, such bad readings are indicated as such by the console display, allowing the operator to disregard them rather than assigning them to memory.

The MP-3 system is based on the proton-precession principle. See Breiner, 1973 for further details. A descriptive brochure published by Scintrex is appended to this report.

Our survey was carried out within a map-sheet (Quatsino, 92 L/12) which had been aeromagnetically surveyed by the G.S.C. in 1962, using a proton precession total field magnetometer. The results of that survey are plotted on G.S.C. Map 1734G, which shows that our work was done within an area where the total field varies from about 56,510 nanoteslas to about 57,170 nanoteslas. From the start, our instruments indicated figures approximately half these values.\*

Attempts to tune the instruments to values in the neighborhood of 57,000 nanoteslas resulted in readouts of "bad data" or "measure again". Only when the tuning field was set within 3,000 to 4,000 nanoteslas of 27,000 did the instruments begin to produce data which was self-consistent and free of error messages.

A phone call to Mr. Rolf Ehrat in Scintrex's head office in Concord, Ontario produced the information that all equipment had been checked out and certified to be in good operating condition before shipment to us. It seemed to Mr. Ehrat (and to us) unlikely that there had been any damage during shipping (none was apparent to the eye) of such a nature that both instruments were affected in an identical manner. We checked our operating procedures with Mr. Ehrat and reviewed the operating manuals repeatedly, finding no omissions or errors in our operating techniques.

Mr. Ehrat then suggested that some strong local electromagnetic disturbance might be overriding the circuitry in the instruments. He suggested moving to a different area in order to test this hypothesis. Accordingly we moved approximately 80 km. to the southeast into the Nimpkish valley, where we discovered there to be no difference in the operating characteristics of the instruments.

\* See note at end of section.

With the kind assistance of Mr. John Jones of the Port Hardy office of the B.C. Telephone Company, we were able to identify three possible sources of electromagnetic disruption. They are discussed below.

A B.C. Telephone Company reflector is located on the summit of Mt. Byng, about four km. south of our claim group. It is manufactured by Faranon Radio and consists of a traveling wave tube operating in the 6 to 8 gigahertz band. Mr. Jones stated that there was very little loss in the microwave beam, which handles only 12 to 15 watts, and that, since our location is at right angles to the direction of transmission, no significant interference is likely.

There is a Canadian Forces radar installation on a hill at San Josef, just west of Holberg, approximately 32 km. from the site of our operations. We were unable to gather any information regarding power output, frequency or directional characteristics of the beam, though it seemed likely that the beam would be directed to the west and north, since the station is a part of the continental defense system. As in the case of the B.C. Telephone installation, the move into the Nimpkish Valley, where we were well shielded by surrounding mountains, seemed to eliminate the base as a cause of our problems.

A third, and more likely, possibility seemed to be a Loran transmitter which had been installed within the past four years south of Port Hardy and west of Port McNeill. According to Mr. Jones, the beacon, which is a slave to a unit in Williams Lake, transmits on a carrier of 100 khz. in a burst of eight pulses at eighteen bursts a second. Peak power is 0.444 megawatts and average power is 360 kw. The Canadian Coast Guard station at Alert Bay informs us that the beacon's exact location is Lat.  $50^{\circ}36'29.73''$ , Long.  $127^{\circ}21'21.04''$ .

According to Mr. Jones, the operating characteristics of the Loran transmission are such that the topographic shielding we used in the Nimpkish Valley would not affect reception of the signal there. Our locations in the Nimpkish Valley and on Holberg Inlet were about equidistant from the beacon.

In a further attempt to ascertain whether this beacon was indeed the source of the problems, we made further checks after our departure from Port Hardy. These were carried out at Woss, at Sayward and at Oyster Bay, all on Vancouver Island, and in Richmond, B.C. in the outskirts of Vancouver. Operating characteristics appeared to be identical with those we had encountered in Port Hardy.

We have sent copies of some of our printouts to Scintrex. The instruments have been returned to them for rechecking. At the suggestion of Mr. Tom Hasek, Scintrex's Vancouver representative, we are submitting the data we have accumulated. We hope that Scintrex may be able to establish mathematical procedures for transforming the data which will allow us to make them directly comparable with the total magnetic field as it is known to be in that area.

\* Note: Furthermore, the range of values which we encountered was much less than we had anticipated, based on the aeromagnetic survey.



## References

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- Breiner, S. 1973: Applications Manual for Portable Magnetometers. Published by Geometrics.
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- Muller, J.E. et al 1983: G.S.C. Map 1552A, Geology, Alert Bay - Cape Scott, B.C. 1:250,000
- Pearson, B.D. 1983: Geology, Petrography, Silt and Rock Geochemistry, Wanda Claims, Coal Harbour Area, Northern Vancouver Island. A.R. dated March 22, 1983
- Young, M. 1969: Expo Group, A.R. #2190
- G.S.C. 1963: Aeromagnetic Map, Quatsino, Vancouver Island, N.T.S. 92 L/12, 1:63,360
- Northcote, K.E. 1971: Rupert Inlet - Cape Scott Map-Area, B.C.D.M. G.E.M. 1970, p. 254-278
- Northcote, K.E. 1969: Geology of the Port Hardy - Coal Harbour Area, B.C.D.M. Annual Report on Lode Metals, 1968, p. 84-87

## Qualifications of Personnel

### Bradford D. Pearson

S.B., Mass. Inst. of Tech. 1950; M.A., Boston Univ. 1961; Grad. work in Econ. Geol., Harvard Univ., 1955-6. Member Prof. Eng. of B.C., Fellow, Geol. Assoc. Canada. Member Geol. Soc. Amer., A.A.A.S., C.I.M., M.A.C. Have practiced as an exploration and mining geologist in western Canada since 1962. Experience includes carbonate-hosted lead-zinc deposits, massive sulfides, porphyry copper-molybdenum deposits, uranium exploration, heavy oil, tar sands and natural gas. Have specialized in geochemical approaches to exploration. Was a staff geologist with Utah Construction and Mining Company during the early phases of exploration of the ground under discussion in this report.

*Bradford Pearson*

### Robert W. St. John

B.A.Sc., University of British Columbia, (Geological Engineering, Geophysics Option) 1972. Employed by Cities Service Co., Ltd., Calgary, May 1972 to May 1974 as exploration geophysicist. Employed by Digitech, Ltd., Calgary, May 1974 to Oct. 1974 as seismic data processing analyst. Incorporated Statcom, Ltd. Nov. 1, 1974. Has been president and majority shareholder since that time. Company is involved in seismic refraction data processing and analysis. Registered with Assoc. Prof. Eng., Geol., and Geophys. of Alta. as Prof. Geophysicist. Member, Society of Exploration Geophysicists and Canadian Society of Exploration Geophysicists.



Statement of Costs

Personnel

B.D. Pearson

Field time: March 1-9 9 days @ \$425 \$3,825.00  
Office " : " 4 " @ \$425 1,700.00

R. St. John

Field time: March 1-9 9 days @ \$425 3,825.00  
Office " " 2 " @ \$425 850.00

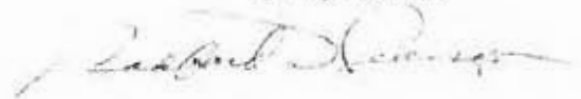
Gradiometer Rental Charges 1,897.64  
" Shipping Charges 361.34  
Phone Charges (Calls to Scintrex) 80.26  
Truck Charges (4x4)  
9 days @ \$40.00 360.00  
1688 Km. @ 12¢ 202.56  
Food and meals at Port Hardy 387.35  
(18 man-days @ \$21.52)  
Motel, Port Hardy; 8 days @ \$40.66 325.28  
Ferry charges 44.00  
Field supplies 58.14  
Drafting: 10 hours @ \$20.00 200.00  
Typing: 20 pages @ \$5.00 100.00  
Xeroxing and map reproductions 47.67

\_\_\_\_\_  
\$14,264.24

Plus credit from PAC account

4,135.76

\_\_\_\_\_  
\$18,400.00



Supplement to Statement of Costs

This statement reflects the loss of credits for the portion of Mr. St. John's time and expenses due to malfunctioning of the magnetometry equipment and the refund of shipping and leasing costs by Scintrex. It represents our best estimates of the time spent by Mr. St. John in the geophysical portion of the work programme.

Equipment rental (refunded)	\$1897.64
Shipping charges (refunded)	361.34
St. John: 7 days @ 425.00	2975.00
Food: 7 man-days @ \$21.52	150.64
Room: 7 man-days @ \$20.33	142.31
Phone calls to Scintrex	80.26
	<hr/>
Total dollar loss of work credits	\$5607.19
Originally claimed	\$14,264.24
Minus geophysical costs	-5,607.19
	<hr/>
Adjusted cost to be credited	\$ 8,657.05
Plus PAC allowance	2,542.95
	<hr/>
Total applicable for assessment credit	\$11,200.00

BRADFORD D. PEARSON, F.G.A.C., P.Eng.  
consulting geologist, base metal exploration

7431 ~~370~~ LINDSAY ROAD  
RICHMOND, BRITISH COLUMBIA  
V7C 3M7

March 11, 1984

Scintrex, Ltd.  
222 Snidercroft Road  
Concord, Ontario L4K 1B5  
Attention Mr. Rolf Ehrat

Dear Sir:

Enclosed you will find a number of printouts made of runs taken at a fixed point in Richmond after our return from northern Vancouver Island. During our return trip we tested one console at a variety of points, notably Woss, Sayward and Oyster Bay. The results in all locations were consistent with our results over an 80 Km. stretch of country in the Port Hardy area and with those we have since obtained here in the outskirts of Vancouver. Both consoles refuse to accept tuning fields in the neighborhood of 57,000 gammas, seeming to be willing only to start accepting initial tunings in the range of 20,000 to 32,000 gammas, with subsequent readings in the same location asymptotically approaching figures in the 26,000 to 29,000 range. In these control tests made here, we have used each of the consoles and two of the detector heads. Mr. St. John is presently preparing a detailed account of our experiences, and it should be in your hands within ten days. At the suggestion of Tom Hasek, with whom we have discussed our experiences, we are returning the instruments collect, pending a resolution of the situation.

Sincerely

Bradford D. Pearson

Western Pocasset Resources  
c/o Statcom Ltd.  
#250, 925 7 Ave. S.W.  
Calgary, Alta. T2P 1A5

March 19, 1984

Scintrex  
222 Snidercroft Road  
Concord, Ontario  
L4K 1B5

Attention: Mr. John Baird

Re: Rental of MP-3 System

Dear sir:

This is a brief report on our experience with an MP-3 proton magnetometer-gradiometer rented recently from your company. First of all we wish to state that we like the MP-3 system very much and we look forward to using the system again in the future. Unfortunately our MP-3 did not give us satisfactory results and our survey was a failure. We believe that the equipment was malfunctioning or perhaps the calibration before shipment to us was done improperly. Included in this report are a chronological summary of our survey experiences, and some constructive criticisms of the MP-3. Supportive material include a test printout made at your offices, our test printouts and a sample of data from our survey.

## Chronological Summary of the Survey

The MP-3 was rented for the period Tuesday February 28 to Tuesday March 13, 1984. The survey location was on the north shore of Holberg Inlet, west of Port Hardy on the northern tip of Vancouver Island, B.C.

Tuesday February 28.

The equipment was held up at Toronto airport due to bad weather.

Wednesday February 29

The equipment arrived at Vancouver airport at 3 P.M. There was no noticeable damage to the carrying cases and the equipment was taken to our offices. The component checklist supplied matched all the equipment and none showed any visual damage. That evening the operation manuals were read and one MP-3 console was used for step by step familiarization. The other console was activated briefly to see that it worked.

Thursday March 1.

The trip to Port Hardy took one day. The MP-3 system was always carefully packed in its carrying cases whenever it was transported. At our motel in Port Hardy, both MP-3 consoles were tested again and the operational procedures were reviewed once more.

Friday March 2.

A base station site was selected centrally on our property. There is no domestic activity on the property except for logging, and that was about two miles to the west and minimal due to an industry strike. Glacial overburden covers most of the land except for logging road cuts and road quarries. The station was set up on a forested site about 150 meters off a logging road. A sensor was mounted on the tripod and positioned about 25 meters from the console. The cycle time of the console was set to 5 seconds to allow about 8 hours of survey. This was the first chance we had to observe total field readings away from domestic interference. At this point we did not realize that a predetermined value for total field had to be known for setting the tune field. After some experimentation taking total field readings, we observed that a value of close to 28500 nT was stable over a period of time. We also noticed that with a cycle time of 5 seconds the reading to reading variation was  $\pm 5$  nT, a value greater than we expected. We also observed that placing two hammers under the sensor tripod had little effect on the readings. Our expectations somewhat diminished, we nevertheless set the base station with a tune field of 28500 nT and auto-tuning disabled. The portable console was set up as a gradiometer with a tune field of 28500 nT and auto-tuning enabled. The two instruments were time synchronized and the survey started. A base line was established which would be run at the start of every day. We felt that this would ensure day to day compatibility. It was noted that repeated readings on a station gave gradients varying  $\pm 6$  nT. A tight

grid over an area of interest was surveyed for the remainder of the day.

That evening a dump of the base station and both raw and corrected printouts of the portable console were made. The base station dump had a long period increase in values of about 150 nT and retained its sample to sample scatter of  $\pm 5$  nT. The raw portable printout showed a flat total field over the grid and a random looking gradient. The corrected printout looked much the same, if not more random. It was decided that we should get advice on our results, but unfortunately this could not be done until Monday.

Saturday March 3.

We decided to set up both units as base stations with a separation of one-half mile. They were left to record for several hours and their results were compared. Both printouts showed a sample scatter. The scatter seemed random between instruments with one having a consistently larger scatter. It seemed to us that we would not acquire precision data with the instruments as they were.

Sunday March 4.

The base station was set up and a survey more regional in nature was conducted. Several profiles totaling about 4 miles were made along logging roads. From previous total field work done 15 years ago we expected several hundred nT in total field relief. The results were disappointingly flat. It was noted that a large earthmover parked at the side of the road had no noticeable effect on the total field or gradient.

Monday March 5.

We phoned Mr. Rolf Ehrag and told him of our results. He was of the opinion that the data was totally invalid. Among other things, he suggested that since both instruments gave similar results it was unlikely they could have been both damaged, with which we agree. He thought the problem must be in our operation of the equipment or in local domestic interference. We discussed our operation and concluded that interference was probably responsible. That day we found out that the telephone company has a low power repeater station 4 km. south of our property. The station is a travelling wave tube transmitter made by Faranon Radio operating at 6-8 gigahertz with 12-15 watts power. A telephone company spokesman thought the transmitted beam would be too low power and too narrow to affect us. The armed forces has a radar station 32 km. west of our property. Its power and frequency are unknown to us, however it probably is directed upwards to the west and north. Nevertheless we took the instruments 40 miles to the south into a valley shielding us from both sources of interference. The results were the same. We made another call to Mr. Ehrag and informed him of our results. He could not think of any new solution, but graciously offered to send us another single MP-3 or a MP-2. We declined for two reasons. First there was no time as our reports for assessment work had to be completed by March 23 and one of us had to

return to permanent work in Calgary by March 14. Second we felt that we needed gradient data which a single MP-3 or a MP-2 could not provide.

Tuesday March 6 to Thursday March 8.

We learned of a new LORAN site established 3 years ago about 15-20 miles southeast of our property. The station is omni-directional with a burst of 8 pulses at 18 bursts per second on a carrier frequency of 100 kilohertz. Peak power is 0.444 megawatts with an average power of 360 kilowatts. Its location would put it equidistant from all our test sites so far. We again phoned Mr. Ehrag and he thought that it may very well be the source of our problems.

We continued to proceed with our survey on a regional nature to cover all the logging roads on our property. We felt that the data may be meaningless but we were there and it might as well be done in case some sense could be made of it later.

Friday March 9.

Our return journey took us about 300 miles down Vancouver Island to Nanaimo. We stopped three times to take total field readings. The results were the same and we suspected the problem was not interference.

Saturday March 10.

We conducted a more controlled test of the instruments in the yard of a home in Vancouver. A sensor was mounted on the tripod and the console set in cycling mode with a 2 second sample rate. The auto-tune was enabled and the tune field set to 20000 nT. The readings were recorded until they settled to a value between 25000 and 30000 nT. This was repeated with initial tune fields of 25000, 30000, and 35000 nT. The process was repeated with a different sensor and with the other console. (The results are included.). The data indicates that both consoles will tune to a total field between 25000 and 30000 nT. Attempts to read data with a tune field between 50000 and 60000 nT results in 'bad data' and 'measure again' error messages.

Sunday March 11.

The equipment was carefully packed and sent back to Scintrex. While double checking the serial numbers, it was noted that the original test printout made by Scintrex dated 84/02/27 had listed a serial number that did not belong to any of our instruments (This printout is included.).



From the data we recorded and from the tests we made we believe that the MP-3 system we rented from Scintrex was malfunctioning. We do not believe that physical damage to the instruments could have resulted in both consoles behaving similarly. We also do not believe our operation of the system was in error, as there are only a limited number of steps necessary to conduct a survey. This is a credit to the MP-3 in that it has many features built in to make operation easy. We are unsure of the effects of local interference. We do know that the same results were recorded outside of their range, but are unsure what effect they would have on properly operating instruments. We are left to conclude that the MP-3 system we received was improperly adjusted by Scintrex.

In light of this or until some other explanation can be brought forward, we feel that we have suffered a severe loss in our limited budget. We have incurred costs of rental of the MP-3, shipping charges, all the expenses of conducting the survey and a waste of our time and effort. It has also meant pressure on us to come up with an alternative assessment strategy for our March 23 deadline. We also felt, and still feel, that accurate gradient data could be important in enhancing our picture of the property. Therefore we propose a settlement which we feel fair. First we feel a full rental refund including shipping costs is in order. Second, as we feel that your MP-3 system is a good one, we wish to conduct the survey at a later time this year or next spring. A credit for 2 weeks rental of a similar system would help put our budget back in order and would not show as a direct cost on your books. Please give this proposal your careful consideration.

Sincerely,

R.W. St. John, P.Geoph.

### Constructive Criticizm of the MP-3 System

1. We received two manuals which were both preliminary. Mr. Ehrag was somewhat surprised to here this. We have just found out your Vancouver agent Mr. Hasek has in his possession a newer manual that is much clearer on operation of the system. Had we had the more recent manual, we may have saved ourselves much time in determining the problems of our system.
2. Mr. Ehrag suggested that a 2 second sample rate for the base station was desireable, if not mandatory during higher sunspot activity. Our system came with 16K memory which would hold less than 3 hours of data at that rate. A practical work day is at least 7 hours, so we had to settle for a sample rate of 5 seconds. For all the expense and effort in conducting surveys, it seems ridiculous to cut corners on something as inexpensive these days as solid state memory. I would suggest a full complement of memory for rental units at least, since users unfamiliar with the system operation usually do not have recourse to order more memory for their current survey.
3. The removable rechargeable battery packs were difficult to remove without a screwdriver to lever them away from the console back.
4. The console touchkeys were bothersome in that often a keystroke would not register or would register more than once.
5. The console display was not easy to see in low lighting conditions (dense forest cover) and was not easy to see from oblique angles.
6. The console carrying pack when set for its largest size was still too small for a large person.
7. Mr. Ehrag suggested the base station sensor be at least 4 feet above the ground, yet the tripod provided was at maximum 43 inches high.
8. The cables provided for the base station were 50 meters long and 6 feet long. Mr. Ehrag suggested the long cable could pick up interference more readily and that we should use a shorter cable, yet still have the sensor at least 8 feet from the console. How ?
9. The extension pole for the portable instrument worked on a friction basis and had no tightening screws. Ours would collapse too readily and was useless in supporting the sensor assembly.
10. Would it be possible to double the necessary electronics and have the gradient sensors measure the field at the same time instead of one after the other. This seems to us to be a far superior method of getting an accurate gradient reading independent of diurnal variation.
11. The paper feed for the Epsom printer needed constant attention.
12. The limited choice of plot scales could be made variable to better suit the range in data values.

# SCINTREX

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L4K 1B5

Telephone: (416) 669-2280  
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Telex: 06-964570

Geophysical and Geochemical  
Instrumentation and Services

27 April 1984

Mr. Brad Pearson  
7431 Lindsay Rd.  
Richmond, B.C.  
V7C 3M7

Dear Mr. Pearson,

Sorry for the delay in refunding the shipping charges to you, and for the bad luck with the MP-3s. On examination of the equipment upon return, a wiring error was discovered, hopefully we can renew your faith in the reliability of Scintrex' equipment.

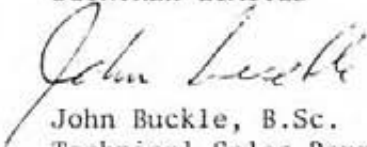
Please find enclosed a cheque for \$226.39, as a refund for the freight paid by you.

Again, we apologize for the inconvenience, and I assure you it was a result of bad luck, and not bad design.

I would like to arrange a demonstration of the MP-3 and IGS-2/MP-4/VLF-4 for you in the near future.

Yours sincerely,

SCINTREX LIMITED



John Buckle, B.Sc.  
Technical Sales Representative.

JB:mb  
Enc.

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Geophysical and Geochemical  
Instrumentation and Services

May 15, 1984

Mr. R. W. St. John, P.Geoph.  
Western Pocasset Resources  
c/o Statcom Ltd.  
#250, 925 7 Ave. S.W.  
Calgary, Alberta  
T2P 1A5

Dear Bob:

I have finally received your letter of March 19th which indeed arrived at Scintrex on March 23rd. Unfortunately, I was out of the country when it arrived and it was diverted to other people who did not bring it to my attention. Thus, while I have a personal excuse, nothing exonerates Scintrex from not handling the matter earlier.

I would like to thank you very much for the completeness of your report. Really, it is divided into two parts. The first part considers the problems which you had with the instrument and the second gives us some constructive criticisms.

With respect to the problems that you experienced with the instruments, our engineers have given me the following information. Upon arrival, one instrument had one printed circuit board dislocated. We expect, however, that this may have happened during the return trip, otherwise you would have been unable to operate the magnetometer at all. After correcting this, one instrument was fully operational and the other was inoperative. Our investigation discovered some wiring errors in a modification which we had made in order to improve the automatic self-tuning feature. Your instrument was one of about four which left the plant with this error. Unfortunately, it was not an error that showed up in our quality control procedures and so, unfortunately, went on to plague not only yourself, but other Scintrex clients.

We understand that your use of the rented MP-3 magnetometers was entirely unsatisfactory and that you, despite proper care and attention, were not able to make any successful readings. I believe that our invoices for this rental have been cancelled so that there is no charge to you.

We fully respect that fact that you went to a great deal of expense to attempt to use non-functioning magnetometers. Unfortunately, we are not in the practice of accepting the costs of such liabilities and you will no doubt accept that this is normal in business. On the other hand, we know that you have a small, but important magnetometer survey that you want to carry out and we do feel a responsibility in giving you some assistance to do this. I can make you the following offers, of which you may wish to accept one:

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Mr. R. W. St. John, P.Geoph.  
Western Pocasset Resources  
May 15, 1984

- At virtually any time, you can borrow one of our MP-2 Proton Magnetometers for up to two weeks at no charge.
- At virtually any time, subject to normal rental stock availability, you can rent MP-3 magnetometers for one rental, of any length, with a reduction in price of 25%.
- Next fall, when we normally have a slow period in rentals due to the freeze up conditions in the east, we will loan you MP-3 magnetometers for up to two weeks at no charge.

If you would like to avail yourself of any of the above offers, please contact Mr. John Buckle at our office here and he will be pleased to assist you.

Now I would like to turn my attention to your constructive criticisms. I will discuss these in the order that you made them:

- 1) You may indeed have received an early version of the manual. For your information, I am pleased to enclose a copy of the current version of the manual which I trust you will find to be satisfactory.
- 2) You are quite correct that our rental units should be at least outfitted with 32K of memory and I have given instruction that this be done.
- 3) The earliest design of the removable rechargeable battery pack was certainly not appropriate. This design has been improved, however, we have recently decided to go to a third design which is surely an excellent one. I cannot say when this third design will be implemented on all units, however, perhaps it will be in place when you use the MP-3 the next time.
- 4) Yours is the first complaint I have heard that the console keys sometimes would not register on the display or, at other times, would register more than once. I personally have found the interfacing between the keys and the display to be very positive. Perhaps the problem that you noticed came from the fact that your units were not functioning properly.
- 5) LCD displays do have their limitations. It is true that they are not easy to see in low lighting conditions and that they are not designed to view from oblique angles. I have found out that when the console is on one's chest and one looks into the display, that it is normally quite legible.
- 6) I am sure that you must have had a console carrying pack which was non-standard. We produce these for large people to use even when they are wearing heavy parkas during cold weather.
- 7) Mr. Ehrat is correct in that the base station sensor should be reasonably high above the ground. However, I am sure the five inches between his suggested four feet and the maximum of 45 inches which you have observed is not very great.



CONFIDENTIAL

Page 3

Mr. R. W. St. John, P.Geoph.  
Western Pocasset Resources  
May 15, 1984

- 8) It is indeed difficult to understand how one could have the sensor eight feet from a console using a six foot cable! However, most people use the 50 meter cable for the base station and, when it is coiled, it picks up less noise. The purpose of the long cable is to permit one to keep a console indoors and yet have the sensor some distance from noise disturbances. Using the shorter cable, I am sure that there would be no sensor-console interplay at a distance of six feet.
- 9) The extension pole which you have received is one that we have used for many years with our MP-2 magnetometer. It has indeed proven to be too weak for gradiometry. I assume that you were using yours for gradient measurements. Thus, some weeks ago, we embarked on a new design of the pole.
- 10) Indeed it would be possible to double the electronics and have two magnetometers in one in order to measure the gradient at the same time instead of having a two second delay. However, this would be quite a bit more expensive. Further, I do not agree with you that this would seem to be "a far superior method". If you study diurnal records, over a period of four seconds there is very little diurnal jump. Further, our automatic base station diurnal correction allows the corrections to be made to the two sensors separately, although the base station magnetometer must be cycled at its fastest rate (two seconds) to make best use of this. The advantage of our design is that the gradient measurement is a simple, low cost add-on. We have seen a lot of field results now and are not concerned, even in high magnetic latitudes, of noise due to the slight delay between readings.
- 11) I, too, have noted that the paper feed for the Epsom printer is, indeed, problematical. As you may know, however, Epsom is by far the most widely sold printer of its kind in the world. Thus, most people seem to be satisfied with it. I think the answer is that it takes minute alignment before beginning in order to ensure that the paper is flowing through correctly. The best way that I have found to do this is to crank through a lot of paper and double it back onto the incoming paper to ensure that alignment is correct.
- 12) You have mentioned that you would like to have a wider choice of plot scales. Of course, this would be an advantage, however, one never knows where to stop in the matter of data presentation. While one would like to have a magnetometer which would directly produce contour maps, in the current design we have allowed for left zeroed and centre zeroed scales, with three different scale sensitivities. We feel that this is generally useful, however, we know that in certain cases it will be necessary to use microcomputers or mainframe computers to further condition the data to get it into a report level quality.

SCINTREX

Page 4

Mr. R. W. St. John, P.Geoph.  
Western Pocasset Resources,  
May 15, 1984

Since our new pamphlets for the MP-3, VLF-3 and IGS-2 were only introduced at the Prospectors and Developers convention in March in Toronto, you may not have received them. I am, therefore, pleased to enclose copies for your information.

Once again, I would like to thank you for your letter which so completely describes the problems you have had and the observations that you have made. I hope that you will find this reply to be favourable and that you will consider the MP-3 or other Scintrex products when you have further requirements for geophysical instrumentation.

Yours sincerely,

SCINTREX LIMITED



Jon G. Baird, B.Sc., P.Eng.  
Senior Vice President

Encl.

cc: J. Buckle  
R. Ehrat  
I. Brcic  
T. Hasek

JGB:lc

SCINTREX

MP-3

Proton  
Magnetometer





## Seven Important and Distinctive Features

1. The design of the 0.1 nT resolution MP-3 is such that the same console is useful for **total field and/or magnetic gradient measurements** in portable, base station or mobile survey applications.
2. With the full memory expansion option, 54 hours of 2 second interval base station or mobile readings can be internally stored. Equally impressive memory capacity is available for portable readings. This allows **computer compatible recording** without an external tape recorder.
3. The **32 character digital display** communicates with the operator in clear language ensuring simple, error free operation. Data quality is improved by allowing the operator to compare the simultaneously displayed present and previous data.
4. For accuracy and ease in data processing, the **actual position coordinates are recorded** either by automated incrementation or by operator entry.
5. Diurnal corrections, data listings and profiles are made in minutes simply by connecting the MP-3 to an identical base station unit and a printer. Alternatively, data can be transferred to a wide range of commonly available analog recorders, tape recorders, modems or microcomputers for **complete flexibility in data handling**.
6. **External data** such as from other geophysical instruments or concerning geology, topography, etc. can be entered with the magnetometer data, stored and output as lists or profiles.
7. The MP-3 can be upgraded so that one operator can make **both magnetic and VLF measurements**.



*Diurnal corrections are simply made by connecting a portable MP-3 to another MP-3 which has been used as a base station.*

## Brief Description

The MP-3 is a magnetometer system which is so flexible that you can use it as a portable, mobile or base station magnetometer. It can measure both total field and magnetic gradients. For different applications the sensor configuration may vary, but the same console is used.

The expandable memory means that the MP-3 can internally store several days' data for almost any application. In-field data processing is done simply by connecting the MP-3 to a printer, tape recorder, modem or microcomputer. Diurnal corrections are made by joining a portable MP-3 to an identical base station unit without need for an intelligent intermediary such as a microcomputer.

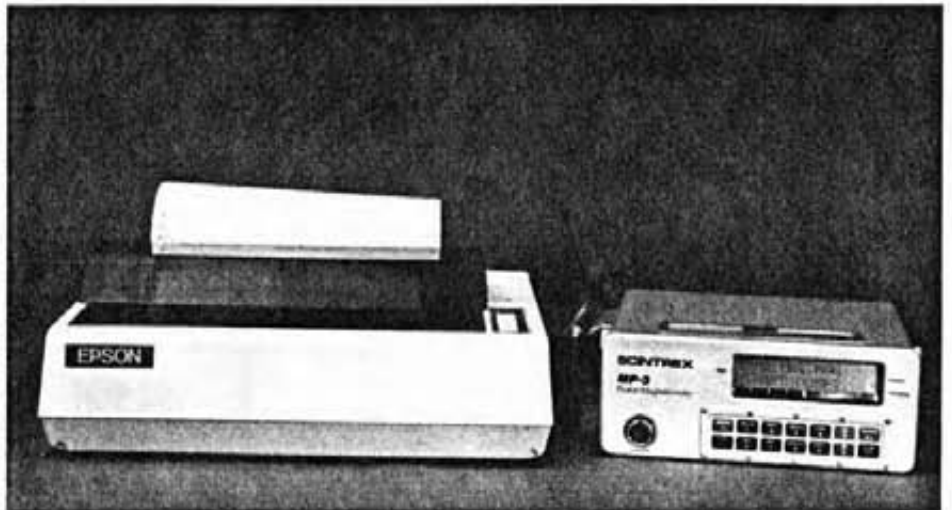
The MP-3 has been designed mainly for use in mineral and groundwater exploration or geological mapping, however, it can be equally useful in archeological searches or marine salvage operations.

A capability identical to that of the MP-3 is available by selecting instrumentation from the **Scintrex IGS family**. Specifically, the IGS-2 System Control Console and the MP-4 Proton Magnetometer Sensor Option together perform the same functions as the MP-3. The difference is that the IGS-2 can be used with either the MP-4 Option or the VLF-4 VLF Electromagnetic Option, **or both**. Since both VLF-4 and MP-4 electronics can fit into one console, the IGS-2/VLF-4/MP-4 combination can be used by a single operator to carry out both VLF and magnetic surveys, greatly reducing cost when both methods are required.

The MP-3 is a dedicated magnetometer and, since it is less expensive than IGS-2/MP-4, it should be selected when it is considered that only the magnetic method is to be used. If, however, at a later date, it is considered desirable to upgrade an MP-3 to the level of an IGS-2/MP-4, this can be done, at extra cost, by returning the MP-3 to the Scintrex plant.



*The MP-3 can be interfaced to computers such as the Apple IIe, IBMPC, Apple III, Osborne, HP-85 and others for archiving of data or further processing.*



*The MP-3 outputs direct to a digital printer.*

## Benefits

### Better Magnetic Data

With a resolution of 0.1 nT (gamma), the MP-3 offers state-of-the-art sensitivity to permit you to detect minute changes in the magnetic field. The automatic tuning feature maintains this resolution over the wide field strength range of the instrument. As the magnetic field strength varies, the MP-3 is set automatically and precisely.

You will avoid field transcription errors because you won't need a notebook. When you file magnetic readings in the fail-safe internal solid-state memory, time and exact position coordinates are also automatically recorded. If the main batteries fail, then a miniature nickel cadmium battery pack will preserve the memory safely for several weeks.

You can observe previous measurements while you are taking a reading. The two line, 32 character LCD display shows the present measurement in the upper line and the measurement from the previous station in the lower. With a few keystrokes you can view the data recorded at any station. This flexibility allows you to maintain data quality by following the trend of the data.

At last you can accurately and automatically measure and correct for diurnal variations in the earth's magnetic field. Precise time synchronization between the moving and base station consoles ensures accuracy since, when measurements are recorded in memory, time is included accurate to one second. Calculation errors are eliminated because the correction is done automatically by resident microprocessors once the field and base station units are interconnected and a few commands are entered by keyboard. Next, the data can be displayed numerically or graphically on a printer.

Get more magnetic information by measuring the gradient field. Vertical gradient measurements can often indicate geological contacts or near surface magnetic sources better than total field measurements. They are relatively free from diurnal noise and automatically remove regional gradients. Compared with using a computer to calculate the

gradient from sparse total field data, the actual measurement is more accurate.

### Simplified Operation

The microprocessor based MP-3 makes magnetic measurements much easier because of automation. For example, the switch adjustment required from time to time in manually tuned magnetometers is now done by software which instructs the MP-3 to continually tune as the field strength varies. The instrument retains the instruction until it is changed, even if the power is turned off. You can easily maintain high accuracy by using this capability.

The 14 pushbutton keyboard comprises only numbers and easily understood commands. For instance, in ground

simply by making a few cable connections. It is not necessary to learn to use a microcomputer to carry out such tasks. Simplify your field operation with this self-contained system.

All of this capability is contained in a single compact, rugged, yet lightweight, 4 kg console. Worn on the chest during field portable surveys, the MP-3 console is easy and comfortable to carry. The field portable, orientation insensitive sensor is also lightweight and, in addition to the standard staff mounted configuration, it can be mounted on a backpack harness leaving the hands free. In a few minutes the single total field sensor and staff can be converted to gradient configuration by the addition of a staff extender and a second identical sensor.



surveying you only have to press one key to take a measurement, one to store the reading and another to advance the automatically displayed station number for the next reading. In fact, you can even operate in an automatic station incrementation mode requiring only two keys to be pushed.

You won't need to carry a list of codes because the MP-3 display replies with simple words. The 32 character display asks questions such as, 'Gradiometer', to which you reply either 'Select' or 'Disable' by keystroke, depending on whether or not you wish to measure the gradient field. Such simple human interfacing means that an operator quickly learns to use the MP-3.

Any operator can make diurnal corrections and output data listings or profiles

### Many Applications

The MP-3 is a flexible, multipurpose magnetometer system. It can be used under worldwide climatic conditions and in magnetic field strengths from the equator to the poles. It is equally useful as a field portable or base station magnetometer. As a mobile magnetometer it is ideal for applications where the sampling interval need not be faster than 2 seconds. Such applications would include vehicleborne, marine and certain airborne surveys.

Expand the memory size to suit your application. If you plan to use the MP-3 for mobile surveys or as a base station, you can add enough memory to store 54 hours of data, with measurements every two seconds.

## Benefits

The automatic memory is so versatile that, having taken a magnetic reading, you can use it to record ancillary information such as weather, terrain or other geophysical data. In fact, the MP-3 can be used without a sensor as an electronic notebook in many different applications.

Depending on your requirement, you can power the MP-3 in the most practical way. Rechargeable batteries or disposable C cells can be used for portable surveys, while external batteries may be best for mobile surveys or base station operation.

## Save Time

With the MP-3 you can save time during both the field measurement and data reduction phases of a survey. The measurement time of the MP-3 from the press of the start key to the display of the total field reading is only 2 seconds. Then you can be moving instead of writing because the automatic memory saves the data, free of any error.

Instead of hours, you spend only minutes to watch the MP-3 correct, list and plot data. You will find that not only will your field plotting always be up to date, but your operator will really enjoy data reduction and plotting, once considered laborious and unwanted tasks. The geophysicist can spend time interpreting data rather than calculating it.

Save time, confusion and error during portable surveys when the MP-3 tells you: 1) which station you came from, 2) where you are, and 3) where it expects you to move to next. To use this feature, you initialize the console before you survey by entering the nominal station spacing. The MP-3 will then increment or decrement station numbers by this amount when you depress the appropriate key. If you want to take a reading at a position other than the normally incremented one, you can manually enter the coordinates.

In virtually the same time on survey, the MP-3 will permit you to measure both the total field and the vertical magnetic gradient. Thus, for the same cost you get more diagnostic information.



*Total field measurement using staff and pouch on belt. Staff may also be extended and planted on the ground.*



## Features

**Multipurpose system.** The MP-3 console functions as a portable, mobile or base station magnetometer and measures both the total field and magnetic gradient. To change applications, only the sensor needs to be altered.

**Base station and mobile applications.** For these applications, data can be stored in the internal, solid-state memory of the MP-3, eliminating the need for an external digital tape recorder at the installation but still ensuring computer compatible data. This eliminates any down time which could be caused by such a recorder as well as greatly reducing the weight, complexity and power consumption of the instrumentation.

For airborne applications special Scintrex sensors may be required for installation in 'stingers' or towed airfoils. Similar sensors are available for mounting on a boom attached to a vehicle or in a 'fish' for marine applications.

**Gradiometer capability.** To permit gradient measurements to be made, a staff extender and a second, identical sensor are added. In the normal portable configuration the staff is carried vertically, so that the vertical gradient is measured. The total field value measured by the lower sensor is also recorded.

Two staff extender lengths are supplied so that, without purchasing a second gradiometer staff, you can choose to survey with either 0.5 or 1.0 m sensor separations. The shorter separation makes the staff easier to carry and is sufficiently sensitive for many applications. In areas of very low gradient, the 1.0 m separation can be used. After the proper sensor separation is chosen, the MP-3 displays, records and outputs the data in nT/m.

**High resolution.** The resolution of the MP-3 is 0.1 nT, about ten times higher than commonly used portable magnetometers. This feature means that the accuracy of ground magnetic surveys is not limited by instrumental restrictions, but rather by geological noise. It also means that the instrument has sufficient resolution for many aerial survey applications. The high resolution

is achieved by a precise period measurement, rather than a frequency multiplication technique.

**High gradient tolerance.** All proton magnetometers are limited by steep magnetic gradients. The MP-3 specification of  $\pm 5000$  gammas per metre for total field measurements means that data can be gathered even in the highest gradients which may be encountered in field surveying, such as over basic rocks or iron formation. This specification is held over the entire -40 to +55°C and 20,000 to 100,000 nT operating ranges.

**Automatic tuning, worldwide range.** The 0.1 nT resolution and 1 to 2 nT absolute accuracy of the MP-3 are supported by the automatic tuning. A traverse could be made from the equator to a magnetic pole without manual tuning.

When in the automatic tuning mode, the MP-3 tunes itself to the previously measured value. If the difference between two successive values exceeds 1500 nT, a reading cannot be made to 0.1 nT but an approximate value will be displayed. Then, all that is required is to read again to achieve a reading to 0.1 nT. Thus, when differences in values of more than 1500 nT occur between stations, accurate readings can still be easily made, although an extra step is required.

**Manual tuning for base stations.** Manual tuning can also be selected. This is useful in base station applications to avoid any mistuning due to noise spikes.

**Automatic diurnal correction.** To correct the spatial data for temporal variations of the magnetic field during the survey, a moving MP-3 console is brought to a stationary (base station) MP-3 and they are connected with a cable. A few commands are entered via the keyboards and the two magnetometers begin to communicate. The moving MP-3 accepts data from the stationary unit and, cross-filling by time, makes the diurnal corrections. This takes a few minutes for an entire day's data. Then, the moving MP-3 is prepared to output diurnally corrected data onto a printer, strip chart recorder or other peripheral device. In



*The vertical gradient measurement is made by adding a staff extender and a second sensor identical to the total field sensor.*

## Features

case it is desirable to save the uncorrected raw data, these can be output from the moving MP-3 before it is connected to the base station unit.

As a base station magnetometer the MP-3 can read as fast as each 2.0 seconds and its clock is accurate to 1 second, ensuring accurate diurnal corrections.

**Control of reading quality.** If the precision signal is too low or too noisy, a 'Bad Data' alarm message is shown on the display. The operator then has the choice of recording an inaccurate value or repeating the reading.

**Removal of background level.** By proper adjustment of a base station MP-3, a background level can be removed when the diurnal corrections are made. For example, a value of 50,500 gammas can be changed to 500 gammas for greater ease in plotting.

**32 character LCD display.** Messages and data are spelled out unambiguously in two lines of 16 characters each, in one of several languages. The display is

highly visible in either bright sunlight or in dim conditions.

**Displays present and previous data.** After a measurement the newly acquired data value is shown in the upper line of the display, while the value from the previous station is automatically displayed in the lower line. This allows the operator to compare values, perhaps the single most important aspect in ensuring data quality. For example, if the difference between readings is great, he can decide to verify the new measurement and/or to return to an intermediate station for a fill-in value.

**Simple keypad operation.** The 14 keys permit numbers or commands to be entered. With few keystrokes, numerous operations are performed on this weather and dirtproof keyboard. Every keystroke engenders an "echo" from the display for simple, unambiguous operation. To maintain a positive tactile feel when keys are depressed, a flexible diaphragm covers the keyboard. If this wears out, it can be easily replaced by removing a few screws.



*The MP-3 is supplied with the ability to display messages in English plus French or any other language using Latin characters.*

**Speaks your language.** The MP-3 can 'speak' a number of languages, provided they use Latin characters. Unless another language is specified, MP-3 instruments are delivered with the capability of displaying messages in either English or French, at the choice of the operator. If another language is required, this can easily be supplied in conjunction with English.

**Computer compatible data recording.** There is no need for a notebook since the MP-3 records header information, data values, station number, line number and the time of each observation. The standard, internal, 16K RAM solid-state memory permits storage of up to 8000 total field measurements including time and header information in the cycling mode; up to 1350 total field measurements including coordinates, time and header information in the portable mode or up to 1175 total field gradiometer measurements with coordinates, time and header information in the portable mode.



*MP-3 set up as a base station.*

## Features

**Memory expansion.** In base station or mobile applications, or even in some portable applications where more than one day's data are to be held in memory, the standard memory may not be sufficient. In such a case, the memory can be expanded in 16K RAM increments, to a total of 192K RAM, 12 times the standard memory. This permits recording of 96,000 base station, 16,200 portable total field or 14,100 portable total field/gradiometer values.

**Fail-safe memory.** The percentage of free memory can be displayed at any time, after two keystrokes. The memory can only be erased by a series of keystrokes which would be impossible to duplicate accidentally. If the MP-3 battery pack becomes discharged or is removed, there is no loss of data in memory since a set of miniature built-in batteries, charged from the main batteries, keep the memory intact for weeks. Additionally, the MP-3 has been environmentally tested to be sure that the memory storage will be safe under all vibration, temperature and humidity conditions.

**Records actual coordinates.** Time and station numbers can be displayed and recorded as numbers of up to 5 digits with a decimal point at any location. Exact coordinates down to 1 unit, such as a metre or a foot, can therefore be recorded.

By pushing a few keys, the MP-3 can be initialized with the nominal line and station intervals to be used on the survey. Then, by pushing the proper keys, the line and/or station numbers can be either incremented or decremented by the initialized intervals. If a reading is to be taken at a different station interval and/or off one of the nominal profiles, then the actual coordinates of the observation point are easily entered. Line and station coordinates are automatically recorded each time an observation is filed, for accuracy and ease in data processing.

**Choice of grid system.** Both line and station coordinates can be recorded either as compass directions (N, S, E, or W) or as Cartesian coordinates using positive and negative signs.

**Records time.** The clock built into the MP-3 shows day, month and year as well as hour, minute and second. This information is automatically recorded and output with the data. Time can be shown on the display, after two keystrokes. The clock will keep time indefinitely, as long as the main battery does not fail. It is accurate to one second over 12 hours over the full operating temperature range of the instrument and is easily reset, if required.

**Accepts ancillary data.** A great deal of ancillary data can be manually entered and recorded at a given station, along with the magnetic parameters. Such data is entered in up to eight blocks of up to five digit, signed decimal numbers. For example, in-phase electromagnetic data could be entered in block Info A, out-of-phase EM under Info B and so on, up to block Info H. Then, this ancillary data can be output on a printer as profiles or listings in exactly the same manner as the magnetic parameters.

**Records header information.** At the beginning of a survey, or a day of surveying, header information such as: 1) instrument serial number, 2) grid number, 3) job number, 4) date, and 5) operator code can be entered into the MP-3. When data are output, this header information is repeated at the beginning

of the data list or profile for each line, to ensure that all data are properly and unambiguously labelled.

**Recalls data.** By keystroke entry, any recorded value can be called up on the display. For example, over an anomaly it might be useful to compare values recorded on an adjacent line. To do this, the operator enters the appropriate line and station number and depresses a memory key. Instantly the recalled data value appears on the lower line of the display. Once one value is recalled, he can move up or down the line recalling data, station by station, with a single keystroke per station.

**Permits revision of data.** It is not necessary to record every measured value. Several readings could be taken before one is selected for recording. Alternatively, more than one value can be recorded with identical coordinates at different times.

To change information already in the memory, the Edit Mode can be used to change line and station numbers or header data. If it is desired to repeat a measurement, a new reading can be recorded and the old one deleted.

**Outputs to many peripheral devices.** The RS-232C port of the MP-3 plus keyboard selectable baud rates and carriage



MP-3 data stored on magnetic tape cassettes can be used for further computer processing.



## Features

return delays, permit data to be output to many commonly available devices. A digital printer can be used to print data as listings or as profile plots. A modem can be used to transmit data from the MP-3 to head office via a telephone line or a magnetic tape recorder can store data for future computer processing.

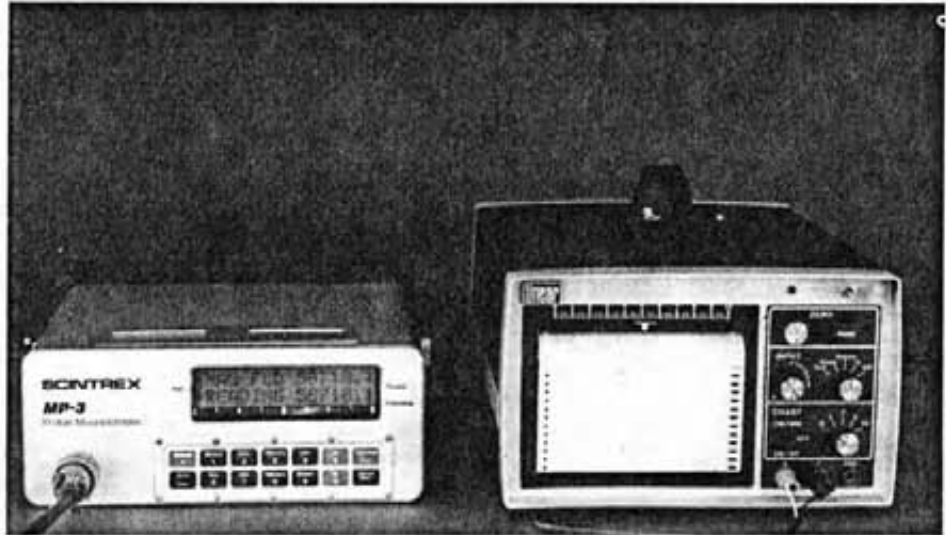
The MP-3 can also output its data directly into portable microcomputers so that data archiving or additional processing can be done in the field. Microcomputers with which the MP-3 has been interfaced include Apple IIe, Apple III, Osborne, IBM PC and HP-85. Several data dumps can be made sequentially.

**Simple, automatic field plots.** To plot data in the field, you do not need a computer. A printer is all that is required to output header information as well as data listings or profile plots. This immediate, error-free output enhances in-field data quality control and saves time and effort, compared to manual data compilation.

When pseudoanalog profiles are output onto a printer, any two parameters can be selected for simultaneous plot printing. One of five full scale sensitivities can be selected for each profile. The scales can be either zero centred or have their zero at the left-hand side of the space allotted to the profile. In the profile displays the actual station numbers and data values are also printed numerically.

In some cases these digital printer outputs may be sufficient for presentation in reports, eliminating the expense of further data processing or drafting.

**Organizes data.** When the MP-3 outputs its data, whether as listings or profiles, they are first sorted by grid number, then in order of increasing line number and, within each line, by increasing station number. In this way, the data are properly organized, regardless of the sequence in which they were taken, for easy comparison. For example, printer output profiles can be easily 'stacked' by placing them side by side.



*In base station or mobile survey applications the MP-3 can output direct to an analog recorder.*

**Low power consumption.** The latest CMOS circuitry and efficient design permit the MP-3 to take as many as 10,000 readings without changing or recharging batteries.

**Four power supply options.** For base station magnetometry the MP-3 can be powered from a 12 V DC external source such as a vehicle battery or from a specially designed Heavy Duty Rechargeable Pack with built-in charger. For portable applications, the Non-rechargeable Battery Pack includes a battery holder and 10 disposable C cell batteries. The Rechargeable Battery Pack is entirely non-magnetic and so is recommended for most portable magnetometer applications as well as for work at low temperatures.

**Fail-safe power supply.** The battery voltage can be checked anytime to be sure that there is enough power left. When the batteries are almost exhausted, a warning indicator will appear on the display during a measurement. If the batteries are not replaced or recharged, then the MP-3 will eventually stop measuring in order to eliminate the chance of corrupted data being measured and recorded.

**Energy efficient solar panel.** An optional Solar Panel Power Source can be used to charge the Rechargeable Battery Pack. This lightweight device is ideal for

areas where grid power is not available or where a motor-generator is too cumbersome to transport or is unwanted because of its noise.

**Wide operating temperature range.** All MP-3 specifications are met over the range  $-40^{\circ}$  to  $+50^{\circ}$ C. For use below  $-20^{\circ}$ C the Display Heater Option and Rechargeable Battery Pack should be ordered when the MP-3 is purchased, although these can be installed later, at greater cost. The heater is thermostatically controlled so that it only comes on below  $-20^{\circ}$ C, in order that battery power is saved at higher temperatures.

**Upgrading for VLF.** An MP-3 can be upgraded to the level of Scintrex IGS-2/MP-4 instrumentation which permits the use of the VLF-4 VLF Electromagnetic Sensor Option. This allows one operator using one console to make magnetic and/or VLF measurements.



# How to Take a Reading with the MP-3 Data Listings and Plots

The following examples of MP-3 displays show just how simple and automatic the operation of the instrument really is.

The three main keying operations required in the measurement procedure are demonstrated in the following three graphical representations of the MP-3 LCD display which are reduced to about 50 percent of actual size.

```
MAG FLD 65432.2
          65498.0
```

Two seconds after pressing the Start key, the above display appears. The upper value is the present total field reading in nT while the lower is the value taken at the previous station. If the new value is acceptable, press the Record key.

```
STATION 12200
CHANGE  12200
```

The above display then instantly appears, informing you of the present station number. To increment or decrement to the next station number press the  $\blacktriangledown$  or  $\blacktriangle$  key respectively and the following display results showing the new station number on the top line.

```
STATION 12300
CHANGE  12200
```

Proceed to the new station and push the Start key once again.

Following are examples of listings and plots which can be output from the MP-3 onto a printer, without the use of a microcomputer.

```
-----
SCINTREX      MP-3 Magnetometer
Base Field 57400  Cycle Time  2  sec  Set No 106120
Line      0  Grid      1  Job      1  Date 84/01/24  Operator      1
-----
Station      0  E
-----
Information
-----
Time  Mag Fld  +1  +2  +3  +4  +5  +6  +7  +8  +9
06 29 06 57407 1  0 9  - 8  0 1  0 7  -1 6  -7 1  - 4  - 4  0 8
06 29 26 57598 9  0 0  0 6  - 7  0 3  0 2  0 1  0 1  - 2  - 3
06 29 46 57599 3  - 7  0 1  0 4  0 3  1 4  - 2  0 5  - 2  - 1
06 30 06 57598 8  - 7  -1 3  - 8  - 3  - 4  0 0  - 1  0 5  - 3
06 30 26 57599 5  - 2  - 7  0 9  0 2  - 1  - 4  - 1  0 2  0 2
06 30 46 57599 4  - 2  0 5  - 7  - 4  0 6  0 4  - 4  0 4  - 2
06 31 06 57599 3  0 0  - 1  0 3  - 4  - 1  0 6  0 1  -1 0 0  0 3
06 31 26 57599 9  - 8  - 1  0 5  0 2  0 1  - 4  0 2  - 5  0 6
06 31 46 57599 4  0 8  - 5  - 9  0 9  - 1  - 1  0 0  - 2  0 0
06 32 06 57599 7  - 7  0 2  - 1  0 8  - 3  - 2  0 3  0 3  - 3
06 32 26 57599 4  - 2  - 3  0 5  - 1  1 1  - 7  0 0  0 0  - 7
06 32 46 57599 2  0 6  0 1  - 5  0 0  0 3  - 4  0 4  0 3  - 4
-----
```

**Base station magnetometer listing.** After the header information for the profile, every tenth magnetic reading and its time of recording are printed in full. The next nine readings are listed as differences from the preceding full value. This is done to reduce the amount of paper required for a dump and to permit a simpler scan of the data to determine the magnitude of diurnal changes. When a profile plot of base station data is done, however, the printer shows all six digits of the value plus one or two profiles.

```
-----
SCINTREX V1.2  Magnetometer
Base Field 58430  *Uncorrected Data  Ser No: 3333
Line      0  N Grid      1  Job      1  Date 84/01/24  Operator      1
-----
Station Mao Fld  Chance  Time  Information
 0  E 58437 1* 12 04 49  A 11111 B: 3333 C: 444 D: 00
 10  E 58443 1* 6 0 12 04 58  A: 22 F: 7777 G: 0 H: 444
 20  E 58445 0* 1 9 12 05 04  E: 0 B: 0 C: 0 D: 0
 30  E 58446 5* 1 5 12 05 21  F: 0 G: 0 H: 0
 40  E 58452 0* 6 5 12 05 45
 50  E 58460 1* 8 1 12 06 10
-----
```

**Portable magnetometer data listing.** After the header information, printed adjacent to each station number, are the following: time, total magnetic field and gradient (if measured). If you are using the MP-3 to record ancillary data, this will print under "Information".

```
-----
SCINTREX V1.2  Gradiometer
Base Field 58430  Corrected Data  Ser No: 106120
Line      0  E Grid      1  Job      1  Date 84/01/24  Operator      1
-----
x Total Field (Gauss)  0  -8  20  -4  40  -0  60  4  80  8  100
o Gradient (Gauss/m)
Station Mao Fld  Grad
1010 N 58437 6  0 5
1020 N 58443 8  0 2
1030 N 58445 9  0 3
1040 N 58446 1  0 3
1050 N 58452 0  0 4
1060 N 58460 1  0 3
1070 N 58462 9  0 3
1080 N 58470 0  0 8
1090 N 58478 1  0 9
1010 N 58481 5  1 3
1110 N 58482 8  1 5
1120 N 58480 0  2 1
1130 N 58443 5  2 0
1140 N 58453 0  1 8
1150 N 58448 8  1 4
1160 N 58448 1  0 6
1170 N 58447 1  0 7
1180 N 58441 2  0 7
1190 N 58439 9  0 5
-----
```

**Corrected plot.** This plot shows diurnally corrected total field and gradiometer profiles. You can also view the plots of the raw base station, mobile or portable data, provided these are done before the base station correction is made.

# Technical Description of the MP-3 Proton Magnetometer

## Magnetometry Specifications

### Total Field Operating Range

20,000 to 100,000 nT (1 nT = 1 gamma)

### Gradient Tolerance

$\pm 5000$  nT/m

### Total Field Absolute Accuracy

$\pm 1$  nT at 50,000 nT

$\pm 2$  nT over total field operating range

### Resolution

0.1 nT

### Tuning

Fully solid-state. Manual or automatic keyboard selectable.

### Fastest Cycle Time

2 seconds. For portable readings this is the time taken from the push of a button to the display of the measured value.

### Continuous Cycle Times

Keyboard selectable in 1 second increments upwards from 2 seconds to 999 seconds.

### Operating Temperature Range

-40°C to +50°C provided optional Display Heater is used below -20°C.

## Standard Console Specifications

### Digital Display

32 character, 2 line LCD display

### Keyboard Input

14 keys for entering all commands, coordinates, header and ancillary information.

### Languages

English plus French is standard.

### Clock

Real time clock with day, month, year, hour, minute and second. Needs keyboard initialization only after battery replacement. One second resolution,  $\pm 1$  second stability over 12 hours.

### Standard Memory

16K RAM internal solid-state memory in single reading mode records up to 1175 total field and gradient observations, or 1350 total field measurements including

coordinates, time and header information. In continuous cycle mode, records up to 8000 total field measurements including time and header information.

### Digital Data Output

RS-232C serial interface for digital printer, modem, microcomputer, cassette tape recorder, a second MP-3 or an IGS-2/MP-4. Data outputs in 7 bit ASCII, no parity format. Baud rate is keyboard selectable at 110, 300, 600 and 1200 baud. Carriage return delay is keyboard selectable in increments of one from 0 to 999. Handshaking is done through X-on/X-off protocol.

### Analog Output

For a strip chart recorder. 0 to 999 mV full scale with keyboard selectable sensitivities of 10, 100 or 1000 nT full scale.

### Trigger Output

Allows MP-3 to act as master for other instrumentation.

## Sensor Options

In the following options the actual sensors are identical, however, mountings and cables vary.

### Portable Total Field Sensor Option

Includes sensor, staff, two 2 m cables and backpack sensor harness. Weight of sensor, cable and staff is 1.8 kg. Staff is 30 x 600 mm collapsed and 1600 mm extended.

### Base Station Sensor Option

Includes sensor, tripod, 50 m cable, external power cable and analog chart recorder cable. Weight of sensor, cable and tripod is 6.5 kg. Tripod is 530 mm collapsed, 1500 mm extended.

### Gradiometer Sensor Option

For use with the Portable Total Field Sensor Option. Includes second sensor, cables and staff extenders for both 1.0



With the use of a modem the MP-3 can send its data across telephone lines.

### Console Dimensions

240 x 90 x 240 mm includes mounted battery pack.

### Weight

2.4 kg excludes batteries.

### Power Requirements

Can be powered by external 12 V DC or one of the Battery Pack Options listed below.

and 0.5 m sensor separations. Combined weight of Total Field and Gradiometer Sensor options with staff, 1 m extender and cables is 1.8kg.

# Technical Description of the MP-3 - Proton Magnetometer

## *Battery Pack Options*

### **Non-rechargeable Battery Pack**

Includes battery holder and 10 disposable 'C' cell batteries for installation on console. Used in low sensitivity total field magnetometry in temperatures above 0°C. Weight is 0.9 kg. At 25°C gives 10,000 total field or 5000 total field gradient readings.

### **Rechargeable Battery Pack and Charger**

Includes battery holder, 6 rechargeable, non-magnetic, sealed lead-acid batteries and charger for installation on console. Best for high sensitivity total field measurements, all gradient measurements and operation below 0°C. Pack weighs 1.3 kg. At 25°C gives 7000 total field or 3500 total gradient readings. Charger specifications are: 140 x 95 x 65 mm, 115/230 V AC; 50/60Hz; 20 VA, overload protected.

### **Heavy Duty Rechargeable Battery Pack**

Includes heavy duty rechargeable batteries installed in a console with a built-in charger. Used for rapid cycling base station or mobile applications. Total weight is 7.6 kg. Dimensions are 240x 90 x 240 mm. Power requirements: 115/230 V AC; 50/60 Hz; 20 VA. Overload protected.

## *Optional Accessories*

### **Language Options**

In addition to English, a second language using Latin characters can replace French.

### **RS-232 Cable and Adaptor**

Includes a special RS-232 data transfer cable and MP-3 to RS-232 cable adaptor. Used for communicating between the MP-3 and peripheral devices including a second MP-3 or IGS-2/MP-4 for diurnal corrections.

### **Minor Spare Parts Kit**

Includes 2 keyboard diaphragms and two fuses.

### **Carrying Cases**

A variety of carrying cases are available to suit different combinations of console and sensor options.

### **Display Heater**

Required for cold weather operation. Powered by main batteries, thermostatically controlled to turn off above -20°C.

### **Solar Panel Power Source**

The panel measures 30 x 550 x 550 mm. Self-contained circuits output 14 V DC to charge the batteries. For rapid charging, two sources can be used in parallel.

### **Peripheral Devices**

Scintrex is prepared to recommend or supply digital printers, modems, cassette tape recorders, analog recorders and microcomputers with software.

## *Memory Expansion Options*

### **Memory Expansion I**

Memory can be added on an existing board to complement the 16K RAM Standard Memory. This can be done in up to three 16K RAM increments to raise system memory to a total of 64K RAM. Each 16K RAM increment holds as many readings as the Standard Memory.

### **Memory Expansion II**

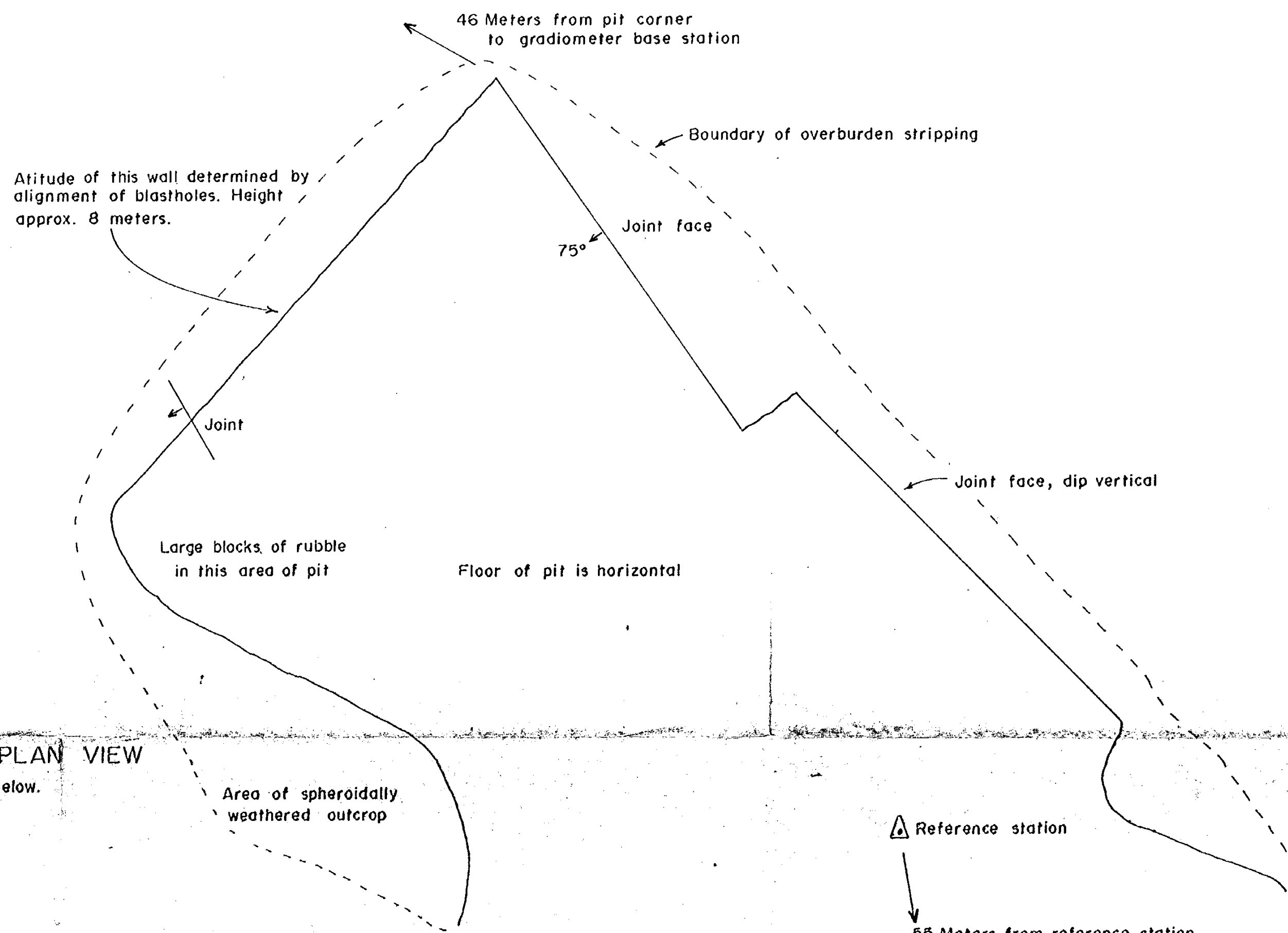
An additional board is required on which an additional eight 16K RAM groups can be installed to bring the system total memory to 192K RAM. Each 16K RAM increment holds as many readings as the Standard Memory.

**SCINTREX**

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L4K 1B5

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Geophysical and Geochemical  
Instrumentation and Services



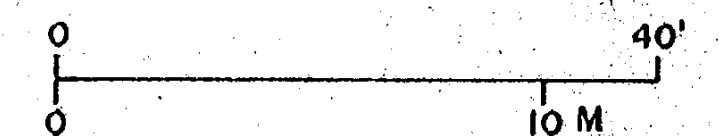
MAP 6  
BASE STATION ROCK PIT - PLAN VIEW  
Lithology entirely as described below.

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

12,302

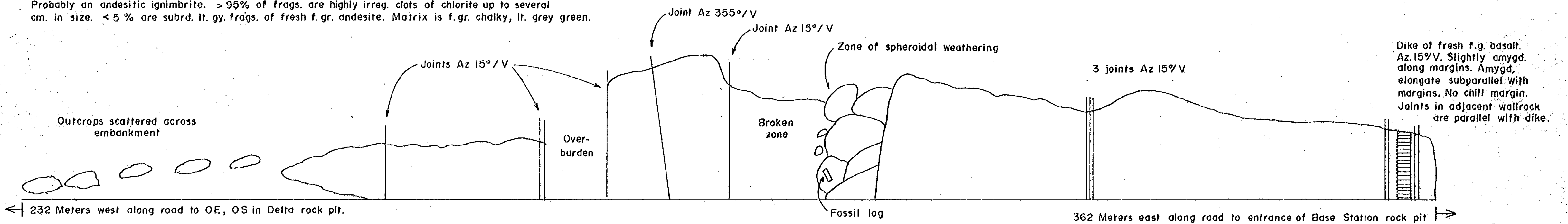
WANDA GROUP

QUATSINO MAP AREA 92L/12  
SCALE 1:305.8 MARCH, 1984  
BRADFORD D. PEARSON, P.Eng., F.G.A.C.

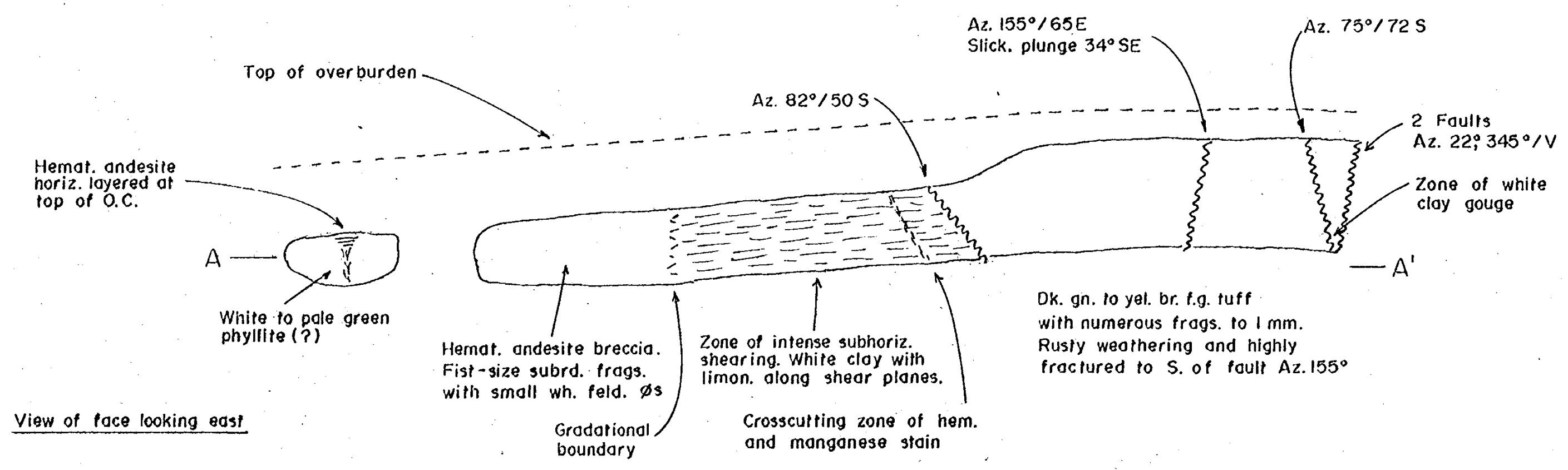


MAP 7  
WANOKANA MAIN ROAD EMBANKMENT

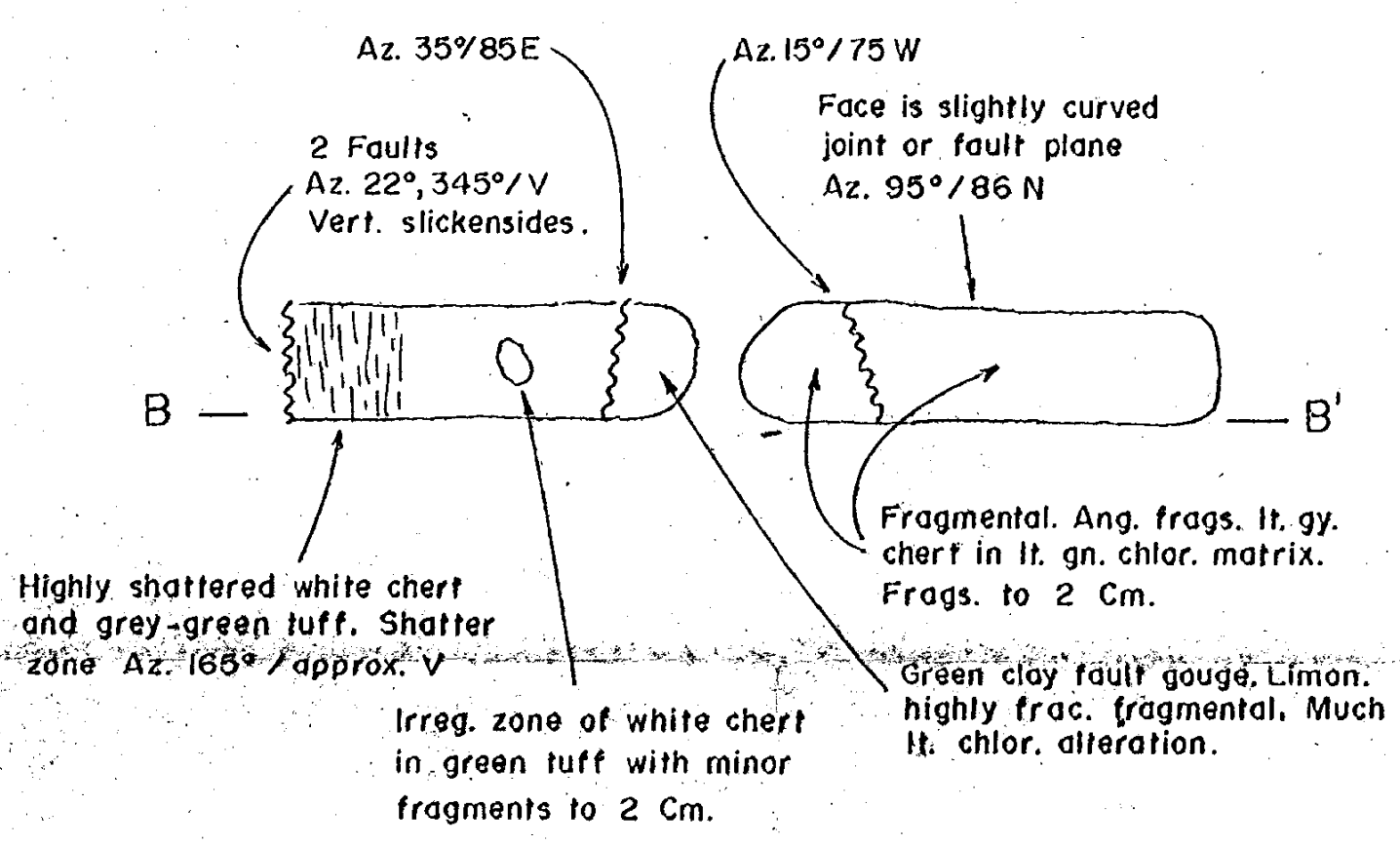
Road outcrop on Wanokana Main, looking north. Rock is massive, remarkably uniform fragmental. Probably an andesitic ignimbrite. > 95% of frags. are highly irreg. clots of chlorite up to several cm. in size. < 5% are subrd. lt. gy. frags. of fresh f. gr. andesite. Matrix is f. gr. chalky, lt. grey green.



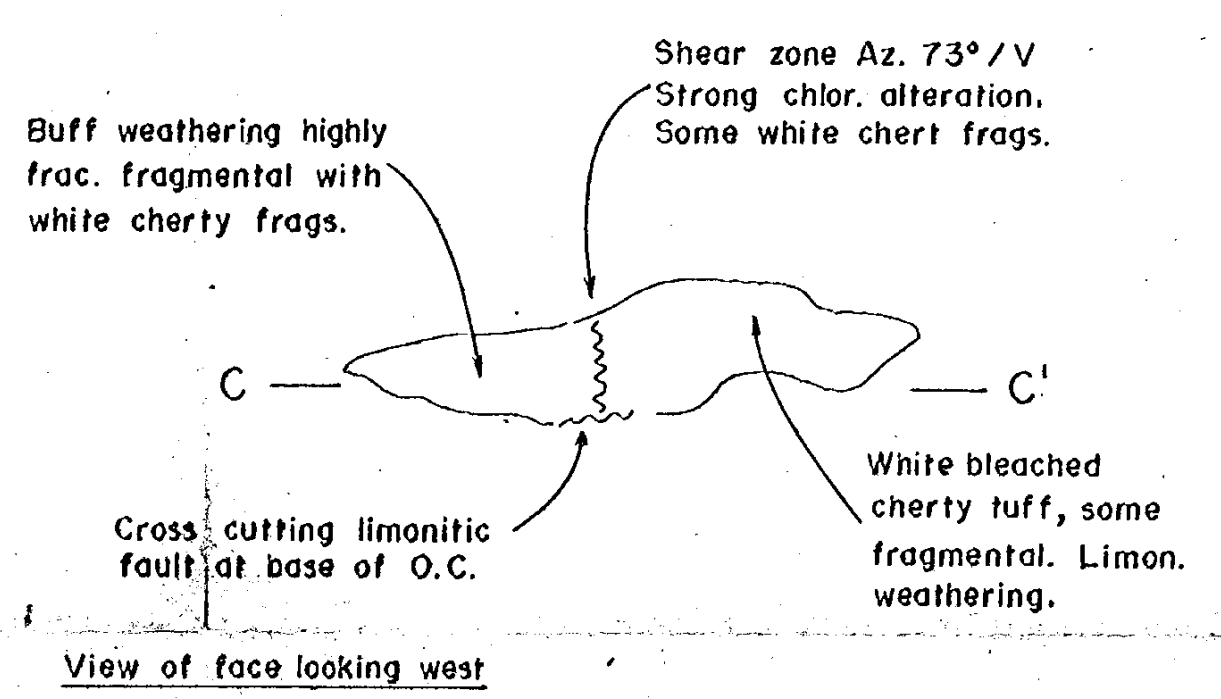
Dike of fresh f.g. basalt. Az. 15°/V. Slightly amygd. along margins. Amygd. elongate subparallel with margins. No chill margin. Joints in adjacent wallrock are parallel with dike.



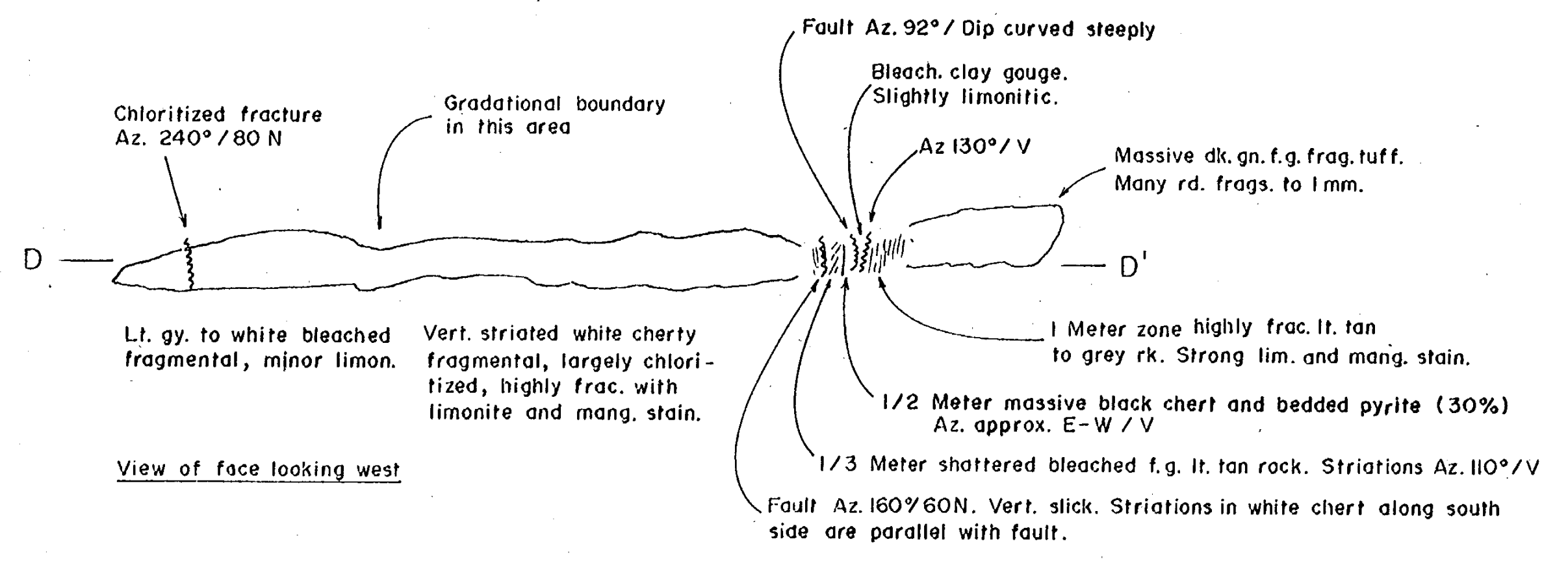
View of face looking east



View of face looking south



View of face looking west



View of face looking west

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ASSESSMENT REPORT

12,302

MAP 5 WANDA GROUP  
DELTA ROCK PIT  
GEOLOGY OF PIT WALLS

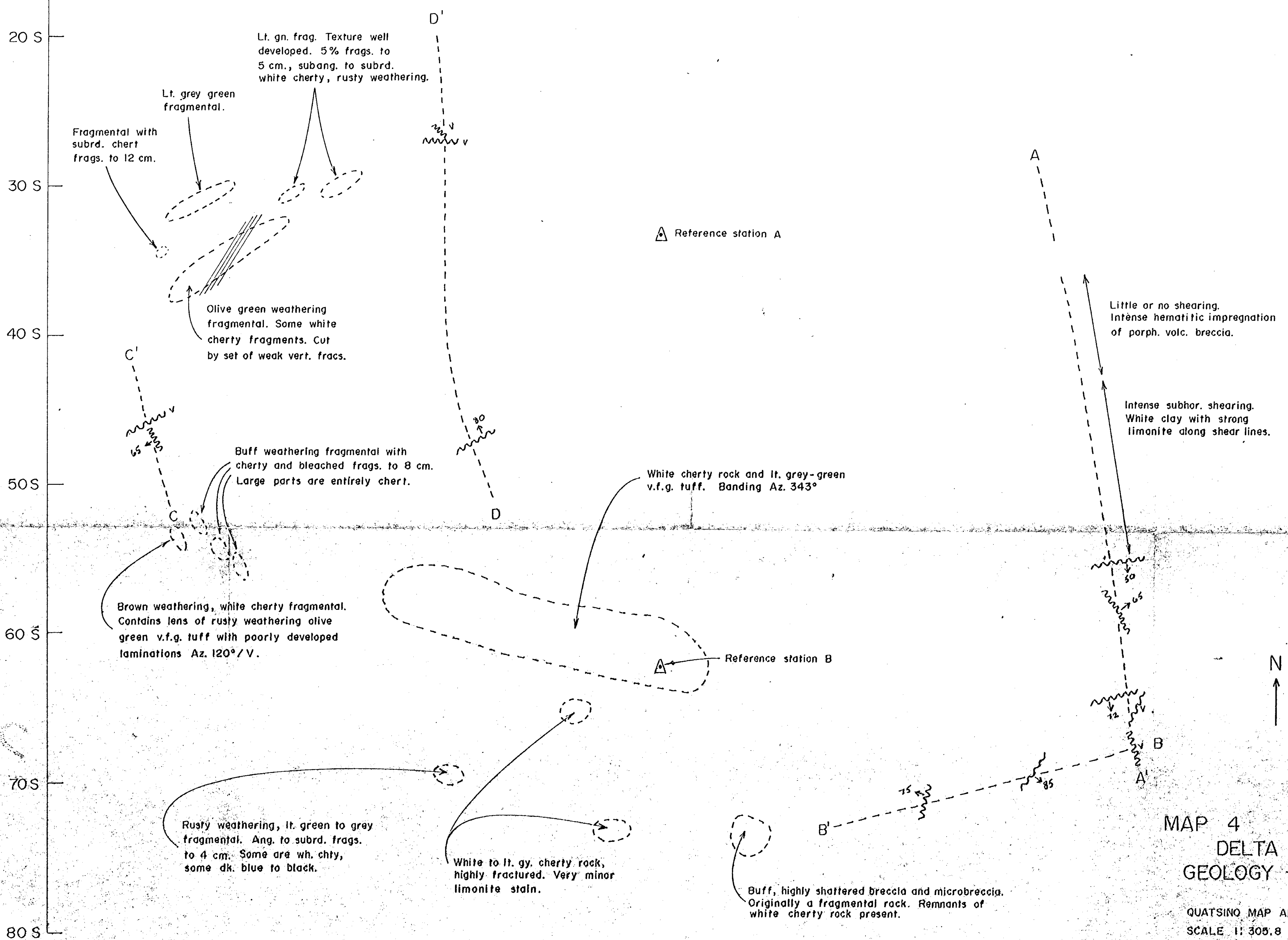
QUATSINO MAP AREA 92L/12  
SCALE 1: 305.8 MARCH, 1984  
BRADFORD D. PEARSON, P.Eng., F.G.A.C.





10 S  
20 S  
30 S  
40 S  
50 S  
60 S  
70 S  
80 S

40 W 32 W 24 W 16 W 8 W 0 E 8 E 16 E

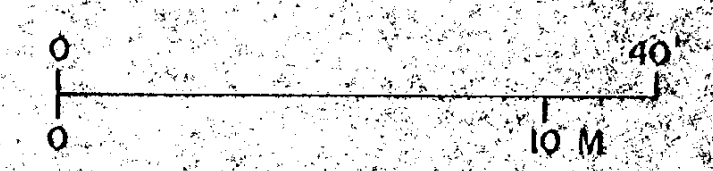


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ASSESSMENT REPORT

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MAP 4 WANDA GROUP  
DELTA ROCK PIT  
GEOLOGY - PLAN VIEW

QUATSINO MAP AREA 92L/12  
SCALE 1:305.8 MARCH, 1984  
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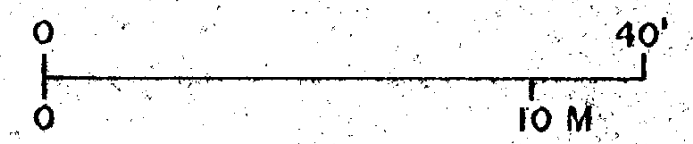


GEOLOGICAL BRANCH  
ASSESSMENT REPORT

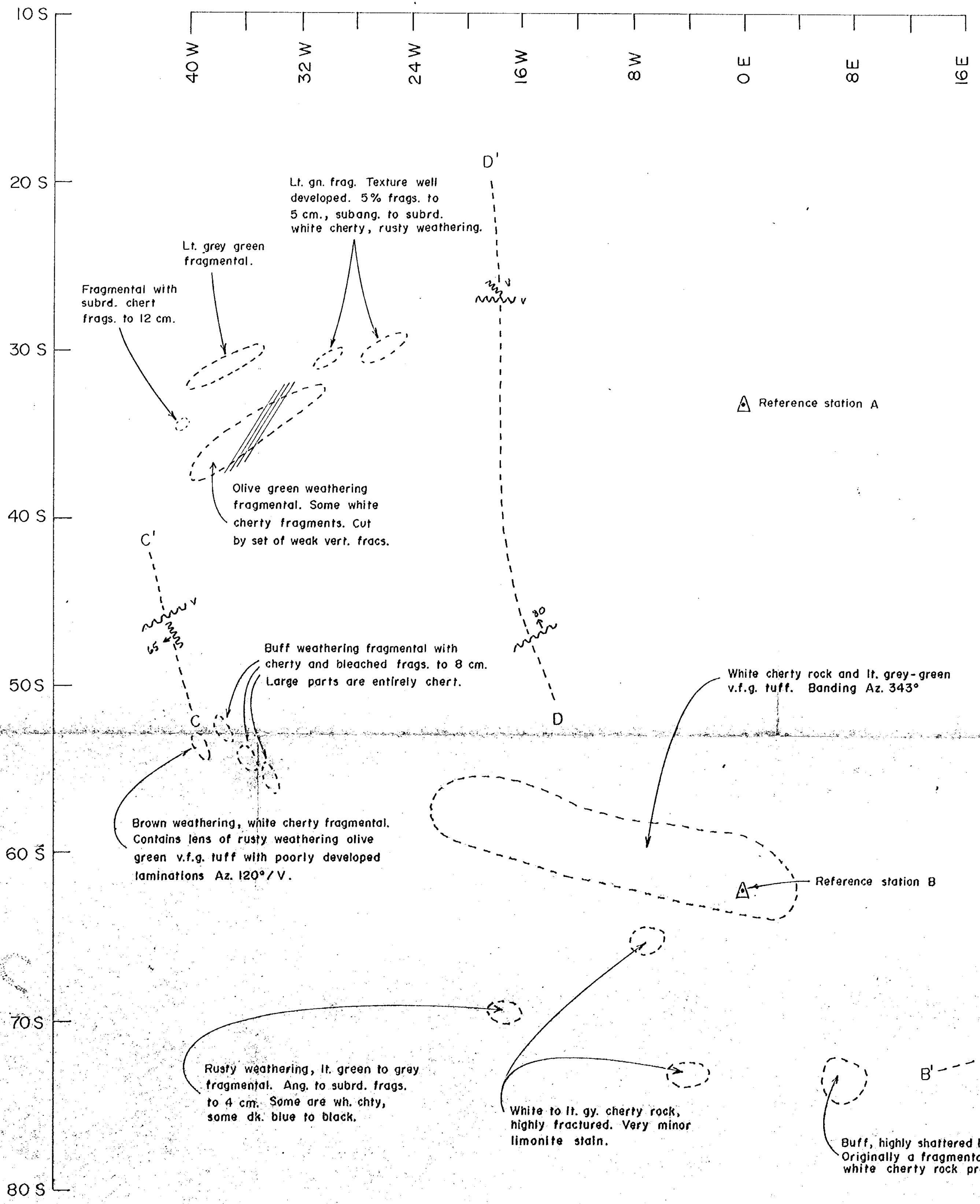
**12,302**

MAP 3 WANDA GROUP  
DELTA ROCK PIT  
LAYOUT OF GRADIOMETER LINES

QUATSINO MAP AREA 92L/12  
SCALE 1:305.8 MARCH, 1984  
BRADFORD D. PEARSON, P.Eng., F.G.A.C.



--- BASE OF LEDGE OR MARGIN OF OUTCROP  
///// BASE OF SPOIL PILE

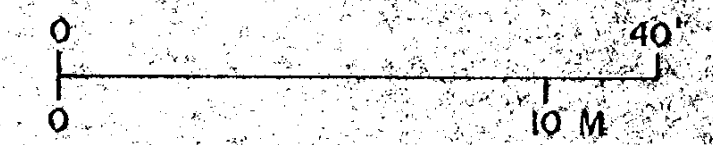


GEOLOGICAL BRANCH  
ASSESSMENT REPORT

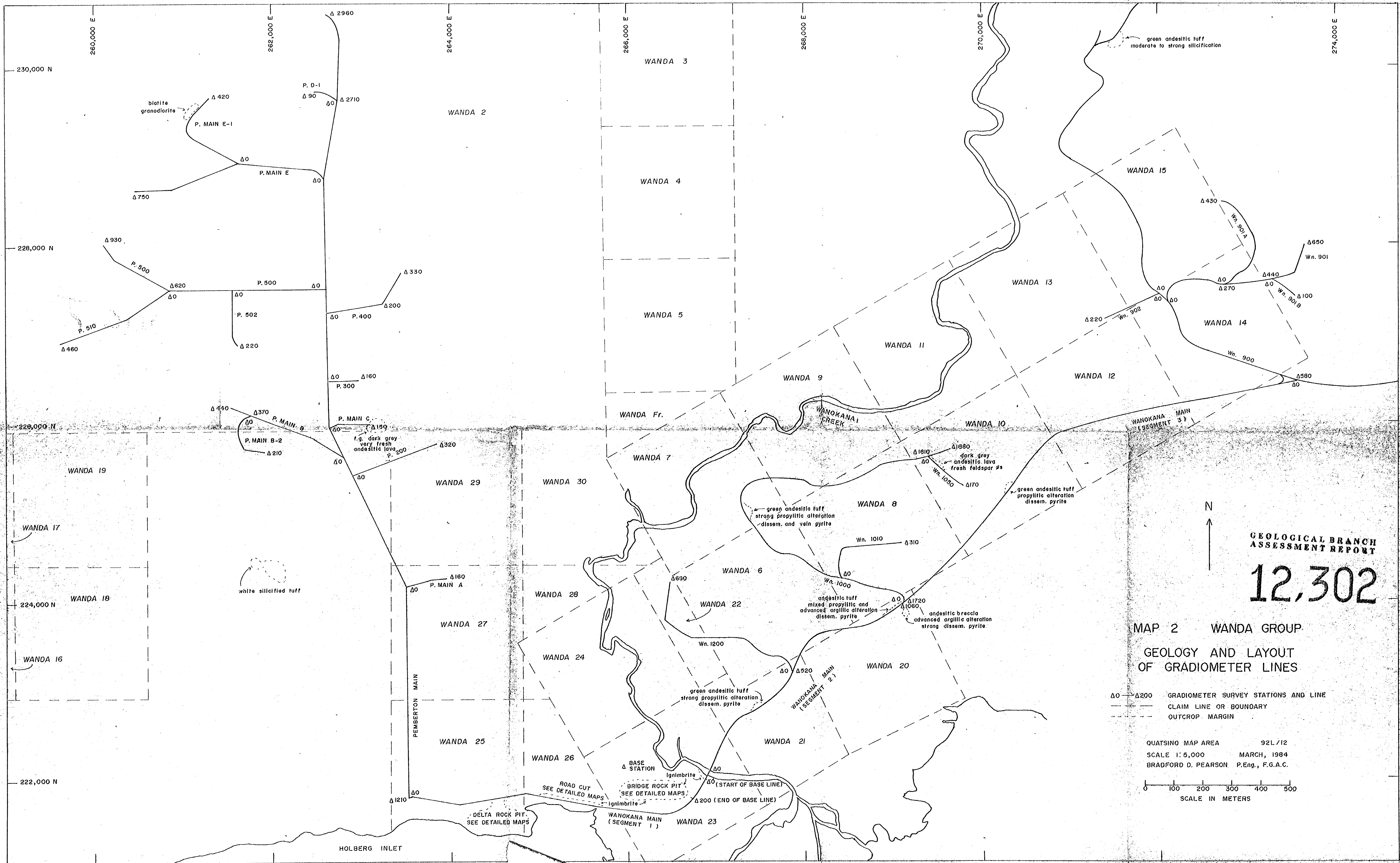
12,302

MAP 4 WANDA GROUP  
DELTA ROCK PIT  
GEOLOGY - PLAN VIEW

QUATSINO MAP AREA 92L/12  
SCALE 1:305.8 MARCH, 1984  
BRADFORD D. PEARSON, R.Eng., P.G.A.C.







GEOLOGICAL BRANCH  
ASSESSMENT REPORT

12,302

MAP 2 WANDA GROUP  
GEOLOGY AND LAYOUT  
OF GRADIOMETER LINES

Δ 0 — Δ 200 GRADIOMETER SURVEY STATIONS AND LINE  
— CLAIM LINE OR BOUNDARY  
- - - - - OUTCROP MARGIN

QUATSINO MAP AREA 92L/12  
SCALE 1:5,000 MARCH, 1984  
BRADFORD D. PEARSON P.Eng., F.G.A.C.

0 100 200 300 400 500  
SCALE IN METERS







SCINTREX V1.2		Gradiometer	
Base Field 28500.		*Uncorrected Data	
Line#	Mag Field (Gauss/m)	Grad	Ser No: 2774.
Station	Mag Fld	Grad	Date: 84/03/04
x Total Field (Gauss/m)		0 -8 20 -4 40 -0+ 60 4 80 100	
o Gradient (Gauss/m)			
Wakana	0. 27846.2	-20.6	#
Bridge	10. 27844.8	-12.7	o . x
	20. 27847.0	-17.7	o . x
	30. 27845.3	-17.0	o . x
	40. 27847.1	-16.9	o . x
	50. 27850.0	-15.0	o . x
	60. 27849.8	-14.4	o . x
	70. 27851.0	-16.7	o . x
	80. 27850.6	-16.7	o . x
	90. 27849.3	-16.0	o . x
	100. 27850.7	-16.4	o . x
	110. 27847.0	-17.0	o . x
	120. 27850.5	-14.7	o . x
	130. 27850.1	-15.7	o . x
	140. 27849.7	-15.0	o . x
	150. 27848.1	-16.7	o . x
	160. 27851.0	-16.1	o . x
	170. 27850.3	-17.9	o . x
	180. 27845.0	-14.4	o . x
	190. 27850.3	-17.7	o . x
	200. 27851.7	-13.6	o . x
	210. 27852.3	-14.5	o . x
	220. 27852.9	-14.7	o . x
	230. 27853.5	-15.8	o . x
	240. 27851.7	-15.4	o . x
	250. 27852.9	-14.4	o . x
	260. 27853.5	-12.3	o . x
	270. 27852.7	-14.2	o . x
	280. 27854.2	-15.2	o . x
	290. 27852.1	-14.1	o . x
	300. 27849.0	-15.9	o . x
	310. 27852.6	-14.7	o . x
	320. 27849.5	-15.9	o . x
	330. 27850.6	-12.3	o . x
	340. 27852.6	-14.6	o . x
	350. 27849.4	-18.0	o . x
	360. 27850.5	-13.1	o . x
	370. 27854.4	-11.8	o . x
	380. 27851.6	-16.2	o . x
	390. 27849.9	-12.2	o . x
	400. 27852.7	-14.5	o . x
	410. 27852.7	-14.8	o . x
	420. 27850.6	-15.6	o . x
	430. 27852.0	-16.6	o . x
	440. 27852.6	-13.3	o . x
	450. 27850.9	-15.6	o . x
	460. 27852.9	-14.2	o . x
	470. 27851.4	-12.8	o . x
	480. 27853.2	-13.6	o . x
	490. 27849.0	-15.9	o . x
	500. 27852.8	-13.0	o . x
	510. 27850.6	-14.4	o . x
	520. 27850.0	-15.9	o . x
	530. 27853.2	-13.6	o . x
	540. 27851.7	-14.2	o . x
	550. 27849.7	-14.4	o . x
	560. 27850.6	-14.7	o . x
	570. 27849.7	-12.2	o . x
	580. 27849.0	-15.9	o . x
	590. 27852.7	-9.4	o . x
	600. 27855.9	-12.9	o . x
	610. 27853.9	-9.5	o . x
	620. 27853.5	-13.1	o . x
	630. 27855.8	-11.6	o . x
	640. 27854.4	-13.8	o . x
	650. 27854.3	-12.5	o . x
	660. 27849.5	-16.2	o . x
	670. 27853.9	-9.4	o . x
	680. 27855.2	-9.4	o . x
	690. 27853.7	-13.7	o . x
	700. 27849.9	-14.9	o . x
	710. 27853.0	-14.8	o . x
	720. 27853.7	-13.7	o . x
	730. 27850.2	-15.0	o . x
	740. 27853.3	-10.5	o . x
	750. 27854.0	-11.7	o . x
	760. 27852.6	-11.5	o . x
	770. 27849.2	-13.6	o . x
	780. 27850.2	-15.9	o . x
	790. 27853.3	-14.4	o . x
	800. 27849.0	-14.2	o . x
	810. 27847.8	-16.6	o . x
	820. 27851.1	-16.8	o . x
	830. 27850.3	-14.9	o . x
	840. 27851.0	-15.9	o . x
	850. 27851.4	-13.2	o . x
	860. 27853.8	-15.9	o . x
	870. 27850.6	-16.7	o . x
	880. 27848.4	-15.1	o . x
	890. 27851.9	-16.5	o . x
	900. 27851.1	-12.5	o . x
	910. 27852.4	-14.1	o . x
	920. 27846.9	-18.1	o . x
	930. 27854.9	-16.3	o . x
	940. 27853.3	-12.6	o . x
	950. 27852.9	-11.9	o . x
	960. 27849.4	-17.8	o . x
	970. 27849.5	-16.2	o . x
	980. 27852.0	-13.1	o . x
	990. 27852.6	-13.5	o . x
	1000. 27852.4	-12.7	o . x
	1010. 27851.7	-12.2	o . x
	1020. 27849.5	-16.6	o . x
	1030. 27852.0	-14.0	o . x
	1040. 27852.3	-14.5	o . x
	1050. 27851.1	-15.4	o . x
	1060. 27851.2	-17.4	o . x
	1070. 27853.7	-9.9	o . x
	1080. 27852.9	-13.9	o . x
	1090. 27853.9	-15.4	o . x
	1100. 27852.9	-14.1	o . x
	1110. 27854.3	-12.7	o . x
	1120. 27854.5	-14.5	o . x
	1130. 27850.5	-13.4	o . x
	1140. 27852.6	-11.7	o . x
	1150. 27851.8	-13.2	o . x
	1160. 27849.1	-11.1	o . x
	1170. 27853.7	-12.4	o . x
	1180. 27849.0	-10.9	o . x
	1190. 27845.1	-11.6	o . x
	1200. 27852.4	-14.0	o . x
	1210. 27855.2	-11.0	o . x

SCINTREX V1.2		Gradiometer	
Base Field 28500.		*Uncorrected Data	
Line#	Mag Field (Gauss/m)	Grad	Ser No: 2774.
Station	Mag Fld	Grad	Date: 84/03/04
x Total Field (Gauss/m)		0 -8 20 -4 40 -0+ 60 4 80 100	
o Gradient (Gauss/m)			
Uukana	0. 27850.1	-12.8	o . x
	10. 27851.7	-12.4	o . x
	20. 27855.9	-14.5	o . x
	30. 27851.1	-14.3	o . x
	40. 27852.2	-15.6	o . x
	50. 27853.3	-13.5	o . x
	60. 27849.2	-13.7	o . x
	70. 27856.1	-13.0	o . x
	80. 27853.2	-13.0	o . x
	90. 27854.3	-11.9	o . x
	100. 27854.3	-16.3	o . x
	110. 27850.3	-15.8	o . x
	120. 27850.8	-15.7	o . x
	130. 27853.5	-12.7	o . x
	140. 27852.7	-10.8	o . x
	150. 27854.5	-14.2	o . x
	160. 27851.8	-14.1	o . x
	170. 27854.6	-13.7	o . x
	180. 27855.1	-14.0	o . x
	190. 27852.8	-13.7	o . x
	200. 27851.5	-14.9	o . x
	210. 27851.1	-14.2	o . x
	220. 27855.2	-12.5	o . x
	230. 27858.7	-11.7	o . x
	240. 27849.2	-17.0	o . x
	250. 27851.4	-14.7	o . x
	260. 27853.1	-11.3	o . x
	270. 27854.2	-15.0	o . x
	280. 27854.6	-13.0	o . x
	290. 27856.8	-14.2	o . x
	300. 27851.9	-14.4	o . x
	310. 27851.8	-15.0	o . x
	320. 27851.4	-11.9	o . x
	330. 27849.4	-17.0	o . x
	340. 27848.3	-17.0	o . x
	350. 27848.3	-16.5	o . x
	360. 27851.7	-11.6	o . x
	370. 27852.5	-11.5	o . x
	380. 27859.1	-8.4	o . x
	390. 27852.2	-12.6	o . x
	400. 27850.6	-16.3	o . x
	410. 27854.6	-12.1	o . x
	420. 27852.2	-9.3	o . x
	430. 27852.2	-12.5	o . x
	440. 27854.0	-10.1	o . x
	450. 27850.5	-13.5	o . x
	460. 27854.4	-12.5	o . x
	470. 27852.9	-12.6	o . x
	480. 27853.0	-13.2	o . x
	490. 27850.4	-15.9	o . x
	500. 27853.5	-10.0	o . x
	510. 27854.4	-13.5	o . x
	520. 27849.8	-15.0	o . x
	530. 27854.6	-13.6	o . x
	540. 27850.7	-11.7	o . x
	550. 27852.3	-13.9	o . x
	560. 27851.0	-15.8	o . x
	570. 27849.2	-13.1	o . x
	580. 27852.7	-13.6	o . x
	590. 27854.0	-12.0	o . x
	600. 27854.1	-13.6	o . x
	610. 27851.4	-12.0	o . x
	620. 27854.6	-13.4	o . x
	630. 27853.3	-12.6	o . x
	640. 27851.4	-16.6	o . x
	650. 27852.7	-15.7	o . x
	660. 27854.1	-13.6	o . x
	670. 27854.0	-12.0	o . x
	680. 27853.3	-15.0	o . x
	690. 27854.5	-14.1	o . x
	700. 27854.6	-12.2	o . x
	710. 27851.4	-16.6	o . x
	720. 27854.2	-11.7	o . x
	730. 27856.2	-11.7	o . x
	740. 27854.3	-12.6	o . x
	750. 27853.5	-13.3	o . x
	760. 27848.5	-16.9	o . x
	770. 27852.1	-14.4	o . x
	780. 27851.6	-16.5	o . x
	790. 27850.9	-11.4	o . x
	800. 27853.3	-14.1	o . x
	810. 27855.6	-12.8	o . x
	820. 27855.6	-13.4	o . x
	830. 27856.3	-15.9	o . x
	840. 27850.8	-12.8	o . x
	850. 27851.5	-16.1	o . x
	860. 27854.0	-11.7	o . x
	870. 27851.2	-12.8	o . x
	880. 27852.4	-12.0	o . x
	890. 27850.4	-15.0	o . x
	900. 27856.5	-8.9	o . x
	910. 27850.1	-14.6	o . x
	920. 27852.1	-12.7	o . x
	930. 27850.5	-15.7	o . x
	940. 27852.8	-13.5	o . x
	950. 27857.0	-9.1	o . x
	960. 27854.0	-13.5	o . x
	970. 27851.1	-17.5	o . x
	980. 27856.6	-14.5	o . x
	990. 27855.5	-10.5	o . x
	1000. 27854.4	-16.2	o . x
	1010. 27852.0	-12.3	o . x
	1020. 27854.6	-14.9	o . x
	1030. 27850.5	-16.3	o . x
	1040. 27853.6	-12.5	o . x
	1050. 27854.6	-15.3	o . x
	1060. 27852.7	-14.9	o . x
	1070. 27852.4	-15.7	o . x
	1080. 27853.8	-11.4	o . x
	1090. 27853.4	-15.1	o . x
	1100. 27852.1	-11.7	o . x
	1110. 27854.5	-16.3	o . x
	1120. 27854.2	-16.4	o . x
	1130. 27848.7	-15.6	o . x
	1140. 27852.1	-16.3	o . x
	1150. 27851.2	-11.7	o . x
	1160. 27852.7	-14.2	o . x
	1170. 27853.5	-14.0	o . x
	1180. 27850.4	-16.3	o . x
	1190. 27850.8	-13.4	o . x
	1200. 27850.1	-15.4	o . x
	1210. 27855.9	-13.2	o . x
	1220. 27849.1	-19.7	o . x
	1230. 27850.4	-15.9	o . x
	1240. 27849.2	-18.0	o . x
	1250. 27850.2	-14.4	o . x
	1260. 27850.3	-16.3	o . x
	1270. 27851.6	-16.5	o . x
	1280. 27851.9	-16.6	o . x
	1290. 27853.5	-17.7	o . x
	1300. 27855.4	-16.0	o . x
	1310. 27850.9	-14.4	o . x
	1320. 27850.9	-14.4	o . x
	1330. 27851.7	-15.9	o . x
	1340. 27848.9	-16.0	o . x
	1350. 27849.3	-18.5	o . x
	1360. 27853.5	-15.2	o . x
	1370. 27851.4	-20.8	o . x
	1380. 27851.0	-14.4	o . x
	1390. 27848.9	-16.0	o . x
	1400. 27847.0	-16.4	o . x
	1410. 27854.0	-12.8	o . x
	1420. 27849.2	-14.9	o . x
	1430. 27854.0	-14.8	o . x
	1440. 27858.1	-12.8	o . x
	1450. 27846.4	-16.5	o . x
	1460. 27848.1	-16.6	o . x
	1470. 27848.3	-17.1	o . x
	1480. 27850.5	-13.1	o . x
	1490. 27850.8	-16.7	

SCINTREX U1.2 Gradiometer Base Field 28500. \*Uncorrected Data Ser No: 2774. Date: 8/10/04 Operator: I. Line: 0, Grid: 2, Job: 1. Station Mag Fld Grad ...

SCINTREX U1.2 Gradiometer Base Field 28500. \*Uncorrected Data Ser No: 2774. Date: 8/10/04 Operator: I. Line: 3, Job: 1. Station Mag Fld Grad ...

SCINTREX U1.2 Gradiometer Base Field 28500. \*Uncorrected Data Ser No: 2774. Date: 8/10/04 Operator: I. Line: 3, Job: 1. Station Mag Fld Grad ...

SCINTREX U1.2 Gradiometer Base Field 28500. \*Uncorrected Data Ser No: 2774. Date: 8/10/04 Operator: I. Line: 3, Job: 1. Station Mag Fld Grad ...

SCINTREX U1.2 Gradiometer Base Field 28500. \*Uncorrected Data Ser No: 2774. Date: 8/10/04 Operator: I. Line: 3, Job: 1. Station Mag Fld Grad ...

SCINTREX U1.2 Gradiometer Base Field 28500. \*Uncorrected Data Ser No: 2774. Date: 8/10/04 Operator: I. Line: 3, Job: 1. Station Mag Fld Grad ...

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SCINTREX V1.2 Gradiometer  
 Base Field 28500. \*Uncorrected Data Ser No: 2774.  
 Line: 0. Grid: 2. Job: 1. Date: 84/03/06 Operator: 1.

x Total Field (Gammmas)	0	20	40	60	80	100
o Gradient (Gammmas/m)		-8	-4	-0 +	4	8
Station	Mag Fld	Grad				
Wandana 0.	28524.1	-18.2	o	x		
Ridge 10.	28530.1	-13.1		x	o	
20.	28527.4	-13.9		ox		
30.	28529.4	-15.0		o	x	
40.	28526.1	-15.4		ox		
50.	28527.4	-13.9		ox		
60.	28528.6	-14.4		#		
70.	28524.2	-14.8		ox		
80.	28525.3	-15.3		ox		
90.	28526.2	-15.9		o	x	
100.	28529.1	-13.5			ox	
110.	28524.1	-15.0		#		
120.	28526.5	-11.6		x	o	
130.	28524.1	-13.0		x	o	
140.	28527.8	-12.9		x	o	
150.	28527.9	-13.2		x	o	
160.	28526.9	-10.5		x	o	
170.	28525.6	-12.7		x	o	
180.	28526.3	-13.5		x	o	
190.	28525.0	-15.9		o	x	
200.	28529.1	-12.3		x	o	

West End.

SCINTREX V1.2 Gradiometer  
 Base Field 28500. \*Uncorrected Data Ser No: 2774.  
 Line: 400. Grid: 3. Job: 1. Date: 84/03/06 Operator: 1.

x Total Field (Gammmas)	0	20	40	60	80	100
o Gradient (Gammmas/m)		-8	-4	-0 +	4	8
Station	Mag Fld	Grad				
P.Main 0.	28513.3	-17.9	o	x		
10.	28511.3	-18.8	o	x		
20.	28512.6	-11.6	x		o	
30.						
40.						
50.	28508.2	-20.2	x		o	
60.	28509.5	-17.2	x	o		
70.	28511.4	-17.9	ox			
80.	28511.7	-17.7	#			
90.	28514.2	-17.1	#			
100.	28512.8	-19.1	o	x		
110.	28511.3	-17.8	#			
120.	28510.0	-19.4	o	x		
130.	28509.2	-17.8	ox			
140.	28513.5	-14.7	x		o	
150.	28509.7	-17.6	ox			
160.	28514.2	-15.2	x		o	
170.	28511.4	-14.6	x		o	
180.	28508.4	-20.2	x		o	
190.	28511.4	-16.0	x		o	
200.	28517.4	-10.5	x		o	

East End.

SCINTREX V1.2 Gradiometer  
 Base Field 28500. \*Uncorrected Data Ser No: 2774.  
 Line: 400. Grid: 3. Job: 1. Date: 36/09/30 Operator: 1.

x Total Field (Gammmas)	0	20	40	60	80	100
o Gradient (Gammmas/m)		-8	-4	-0 +	4	8
Station	Mag Fld	Grad				
210.	28513.4	-14.9	x		o	
220.	28518.1	-12.8	x		o	
230.	28513.2	-14.1	x		o	
240.	28509.8	-20.3	x		o	
250.	28511.3	-17.8	#			
260.	28511.5	-15.1	x		o	
270.	28512.6	-13.9	x		o	
280.	28516.6	-14.0	x		o	
290.	28515.1	-12.5	x		o	
300.	28515.4	-14.6	x		o	
310.	28514.0	-18.5	o	x		
320.	28513.0	-15.6	x		o	
330.	28513.9	-17.0	#			

North End.

SCINTREX V1.2 Gradiometer  
 Base Field 28500. \*Uncorrected Data Ser No: 2774.  
 Line: 500. Grid: 3. Job: 1. Date: 84/03/06 Operator: 1.

x Total Field (Gammmas)	0	20	40	60	80	100
o Gradient (Gammmas/m)		-8	-4	-0 +	4	8
Station	Mag Fld	Grad				
P.Main 0.	28513.0	-17.3	#			
10.	28514.4	-15.5	x		o	
20.	28516.8	-14.3	x		o	
30.	28514.5	-18.2	o	x		
40.	28513.3	-16.5	x		o	
50.	28515.9	-16.6	#			
60.	28514.2	-17.1	#			
70.	28516.0	-17.9	o	x		
80.	28515.4	-15.1	x		o	
90.	28514.4	-14.5	x		o	
100.	28514.4	-14.2	x		o	
110.	28515.3	-14.6	x		o	
120.	28513.7	-17.5	ox			
130.	28513.1	-17.0	#			
140.	28519.4	-14.5	x		o	
150.	28510.2	-19.5	o	x		
160.	28513.8	-17.5	ox			
170.	28515.3	-16.0	x		o	
180.	28513.5	-18.6	o	x		
190.	28513.0	-15.7	x		o	
200.	28513.1	-15.3	x		o	
210.	28514.5	-15.7	x		o	
220.	28514.0	-15.1	x		o	
230.	28516.7	-10.2	x		o	
240.	28513.8	-15.4	x		o	
250.	28517.2	-13.7	x		o	
260.	28514.9	-16.9	ox		o	
270.	28513.0	-17.1	#			
280.	28512.8	-17.2	ox			
290.	28515.4	-15.7	x		o	
300.	28512.9	-16.8	x		o	
310.	28513.1	-14.2	x		o	
320.	28513.4	-15.9	x		o	
330.	28514.9	-15.5	x		o	
340.	28515.9	-16.4	x		o	
350.	28512.3	-18.3	o	x		
360.	28513.9	-19.1	o	x		
370.	28516.1	-19.5	o	x		
380.	28517.4	-13.9	x		o	
390.	28515.4	-16.1	x		o	
400.	28514.8	-17.1	#			
410.	28516.8	-15.4	x		o	
420.	28512.8	-18.4	o	x		
430.	28511.5	-18.5	o	x		
440.	28510.6	-20.6	x		o	
450.	28510.4	-17.7	ox			
460.	28515.5	-17.8	o	x		
470.	28511.7	-16.9	x		o	
480.	28512.0	-17.5	#			
490.	28512.9	-17.3	ox			
500.	28513.8	-18.5	o	x		
510.	28512.8	-16.0	x		o	
520.	28511.9	-17.4	ox			
530.	28516.6	-12.0	x		o	
540.	28513.6	-15.8	x		o	
550.	28514.4	-17.5	ox			
560.	28512.8	-15.7	x		o	
570.	28515.8	-13.5	x		o	
580.	28512.2	-17.9	ox			
590.	28516.4	-14.9	x		o	
600.	28512.6	-15.9	x		o	
610.	28511.0	-20.4	x		o	
620.	28512.7	-17.0	ox			
630.	28512.6	-14.9	x		o	
640.	28515.3	-15.9	x		o	
650.	28510.6	-17.5	ox			
660.	28512.6	-15.9	x		o	
670.	28511.4	-17.0	ox			
680.	28514.9	-18.5	o	x		
690.	28514.3	-16.4	x		o	
700.	28513.8	-14.6	x		o	
710.	28511.5	-19.4	o	x		
720.	28512.5	-14.6	x		o	
730.	28516.0	-16.1	x		o	
740.	28512.8	-16.2	x		o	
750.	28514.8	-16.4	x		o	
760.	28506.9	-21.1	x		o	
770.	28510.2	-17.3	x		o	
780.	28513.1	-17.5	ox			
790.	28513.7	-15.9	x		o	
800.	28516.1	-16.5	ox			
810.	28510.6	-18.7	o	x		
820.	28513.0	-16.5	x		o	
830.	28509.9	-17.3	ox			
840.	28512.3	-17.9	ox			
850.	28513.5	-18.1	o	x		
860.	28513.4	-16.5	x		o	
870.	28510.5	-19.4	o	x		
880.	28515.8	-16.4	x		o	
890.	28513.4	-18.2	o	x		
900.	28513.0	-19.0	o	x		
910.	28513.2	-18.8	o	x		
920.	28510.4	-18.8	o	x		
930.	28510.7	-19.6	o	x		

West End.

SCINTREX V1.2 Gradiometer  
 Base Field 28500. \*Uncorrected Data Ser No: 2774.  
 Line: 502. Grid: 3. Job: 1. Date: 84/03/06 Operator: 1.

x Total Field (Gammmas)	0	20	40	60	80	100
o Gradient (Gammmas/m)		-8	-4	-0 +	4	8
Station	Mag Fld	Grad				
P.500 0.	28511.9	-19.0	o	x		
10.	28510.0	-17.5	ox			
20.	28510.4	-17.6	ox			
30.	28510.4	-14.1	x		o	
40.	28510.6	-17.6	ox			
50.	28506.5	-16.2	x		o	
60.	28510.8	-16.7	x		o	
70.	28511.9	-17.4	ox			
80.	28507.4	-18.0	ox			
90.	28514.1	-15.4	x		o	
100.	28509.0	-18.6	o	x		
110.	28505.2	-20.0	x		o	
120.	28511.1	-14.6	x		o	
130.	28511.8	-17.8	#			
140.	28506.0	-19.6	o	x		
150.	28510.2	-17.8	x		o	
160.	28510.8	-16.2	x		o	
170.	28512.8	-16.2	x		o	
180.	28509.2	-18.8	o	x		
190.	28511.1	-16.9	x		o	
200.	28510.1	-15.3	x		o	
210.	28510.0	-20.0	x		o	
220.	28506.5	-22.4	x		o	

South End.

SCINTREX V1.2 Gradiometer  
 Base Field 28500. \*Uncorrected Data Ser No: 2774.  
 Line: 510. Grid: 3. Job: 1. Date: 84/03/06 Operator: 1.

x Total Field (Gammmas)	0	20	40	60	80	100
o Gradient (Gamm						









12302

Table with columns: SCINTREX, Base Field, Line, P.M., Station, Mag, Fld, Grad, Ser No, Date, Operator, Job. Multiple sections for different field areas like P.M., S.W., E.W., N.W., N.E., S.E., and Main.

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SCINTREX U1.2 Gradiometer  
Base Field 28500.0 \*Uncorrected Data Ser No: 2774.  
Line: 901.1, Grid: 1. Job: 1. Date: 84/03/08 Operator: 1.  
x Total Field (Gauss/m) 0 -8 20 -4 40 -0 + 60 4 80 8 100  
o Gradient (Gauss/m) -8 20 -4 40 -0 + 60 4 80 8 100  
Station MagFld Grad  
0. 28516.6 -17.2 : o x  
10. 28517.5 -18.1 : o x  
20. 28519.5 -18.3 : o x  
30. 28533.1 -16.5 : o x  
40. 28532.8 -17.9 : o x  
50. 28526.5 -21.2 : o x  
60. 28531.3 -19.7 : o x  
70. 28531.7 -16.8 : o x  
80. 28527.0 -19.2 : o x  
90. 28528.7 -19.4 : o x  
100. 28529.3 -19.5 : o x  
110. 28529.4 -18.2 : o x  
120. 28529.0 -19.5 : o x  
130. 28530.8 -18.3 : o x  
140. 28527.2 -19.7 : o x  
150. 28530.3 -16.1 : o x  
160. 28526.9 -17.0 : o x  
170. 28528.1 -17.4 : o x  
180. 28526.0 -16.7 : o x  
190. 28529.6 -17.5 : o x  
200. 28529.6 -16.1 : o x  
210. 28527.0 -16.1 : o x

SCINTREX U1.2 Gradiometer  
Base Field 28500.0 \*Uncorrected Data Ser No: 2774.  
Line: 902.1, Grid: 4. Job: 1. Date: 84/03/08 Operator: 1.  
x Total Field (Gauss/m) 0 -8 20 -4 40 -0 + 60 4 80 8 100  
o Gradient (Gauss/m) -8 20 -4 40 -0 + 60 4 80 8 100  
Station MagFld Grad  
0. 28526.2 -17.9 : o x  
10. 28524.6 -19.0 : o x  
20. 28525.3 -18.4 : o x  
30. 28533.2 -17.1 : o x  
40. 28523.6 -17.0 : o x  
50. 28519.9 -18.4 : o x  
60. 28523.0 -14.2 : o x  
70. 28527.9 -17.2 : o x  
80. 28524.8 -15.1 : o x  
90. 28522.3 -18.4 : o x  
100. 28524.5 -20.1 : o x  
110. 28521.8 -17.4 : o x  
120. 28521.6 -17.8 : o x  
130. 28523.8 -14.5 : o x  
140. 28525.0 -14.1 : o x  
150. 28523.6 -14.7 : o x  
160. 28522.2 -17.7 : o x  
170. 28520.6 -15.2 : o x  
180. 28527.7 -18.0 : o x  
190. 28524.5 -18.6 : o x  
200. 28521.5 -18.0 : o x  
210. 28521.2 -15.1 : o x  
220. 28523.1 -18.8 : o x  
230. 28522.7 -18.4 : o x  
240. 28522.9 -19.3 : o x  
250. 28523.6 -19.6 : o x  
260. 28522.6 -19.3 : o x  
270. 28522.6 -16.5 : o x  
280. 28520.2 -19.0 : o x  
290. 28521.8 -17.1 : o x  
300. 28524.8 -19.6 : o x  
310. 28522.3 -21.3 : o x

SCINTREX U1.2 Gradiometer  
Base Field 28500.0 \*Uncorrected Data Ser No: 2774.  
Line: 902.2, Grid: 5. Job: 1. Date: 84/03/08 Operator: 1.  
x Total Field (Gauss/m) 0 -8 20 -4 40 -0 + 60 4 80 8 100  
o Gradient (Gauss/m) -8 20 -4 40 -0 + 60 4 80 8 100  
Station MagFld Grad  
0. 28522.8 -16.2 : o x  
10. 28519.6 -18.7 : o x  
20. 28518.6 -19.5 : o x  
30. 28518.9 -16.7 : o x  
40. 28519.6 -16.1 : o x  
50. 28519.2 -15.4 : o x  
60. 28521.1 -16.8 : o x  
70. 28516.4 -22.4 : o x  
80. 28515.5 -19.8 : o x  
90. 28520.3 -15.8 : o x  
100. 28517.8 -17.0 : o x  
110. 28516.8 -15.6 : o x  
120. 28519.4 -13.2 : o x  
130. 28518.2 -21.2 : o x  
140. 28514.0 -17.5 : o x  
150. 28514.8 -19.5 : o x  
160. 28518.4 -16.6 : o x  
170. 28516.1 -22.0 : o x  
180. 28517.9 -18.7 : o x  
190. 28516.7 -20.4 : o x  
200. 28516.7 -20.7 : o x  
210. 28515.4 -19.4 : o x  
220. 28514.3 -17.3 : o x

SCINTREX U1.2 Gradiometer  
Base Field 28500.0 \*Uncorrected Data Ser No: 2774.  
Line: 901.3, Grid: 1. Job: 1. Date: 84/03/08 Operator: 1.  
x Total Field (Gauss/m) 0 -8 20 -4 40 -0 + 60 4 80 8 100  
o Gradient (Gauss/m) -8 20 -4 40 -0 + 60 4 80 8 100  
Station MagFld Grad  
0. 28516.6 -16.4 : o x  
10. 28517.9 -15.9 : o x  
20. 28524.7 -19.8 : o x  
30. 28518.3 -18.4 : o x  
40. 28514.9 -18.8 : o x  
50. 28514.9 -20.3 : o x  
60. 28515.6 -18.5 : o x  
70. 28518.3 -15.0 : o x  
80. 28518.4 -16.8 : o x  
90. 28511.7 -19.9 : o x  
100. 28515.5 -15.9 : o x  
110. 28518.3 -16.4 : o x  
120. 28515.9 -17.4 : o x  
130. 28514.9 -19.7 : o x  
140. 28514.4 -22.1 : o x  
150. 28515.7 -17.3 : o x  
160. 28514.9 -18.5 : o x  
170. 28516.7 -17.7 : o x  
180. 28513.5 -21.1 : o x  
190. 28514.1 -20.6 : o x  
200. 28517.5 -15.3 : o x  
210. 28513.0 -19.7 : o x  
220. 28515.1 -17.0 : o x  
230. 28514.5 -20.5 : o x  
240. 28516.7 -16.5 : o x  
250. 28516.2 -18.3 : o x  
260. 28517.7 -18.4 : o x  
270. 28513.7 -16.0 : o x  
280. 28517.3 -16.0 : o x  
290. 28516.6 -18.2 : o x  
300. 28515.5 -19.4 : o x  
310. 28512.9 -21.1 : o x  
320. 28514.4 -19.3 : o x  
330. 28519.2 -14.1 : o x  
340. 28514.2 -18.1 : o x  
350. 28513.0 -19.1 : o x  
360. 28517.4 -17.2 : o x  
370. 28513.6 -15.9 : o x  
380. 28515.3 -17.2 : o x  
390. 28513.3 -18.5 : o x  
400. 28514.8 -19.7 : o x  
410. 28516.5 -19.0 : o x  
420. 28516.1 -14.9 : o x  
430. 28513.3 -19.0 : o x  
440. 28514.1 -17.7 : o x  
450. 28516.1 -16.1 : o x  
460. 28517.8 -16.1 : o x  
470. 28514.0 -18.5 : o x  
480. 28517.6 -16.6 : o x  
490. 28514.5 -19.2 : o x  
500. 28518.9 -14.4 : o x  
510. 28515.3 -14.3 : o x  
520. 28516.2 -15.9 : o x  
530. 28516.1 -17.2 : o x  
540. 28514.8 -20.1 : o x  
550. 28519.7 -12.7 : o x  
560. 28515.0 -20.0 : o x  
570. 28516.0 -19.4 : o x  
580. 28512.2 -20.5 : o x  
590. 28518.0 -16.6 : o x  
600. 28515.0 -16.3 : o x  
610. 28515.3 -18.7 : o x  
620. 28516.3 -18.1 : o x  
630. 28516.6 -18.2 : o x  
640. 28516.2 -19.2 : o x

SCINTREX U1.2 Gradiometer  
Base Field 28500.0 \*Uncorrected Data Ser No: 2774.  
Line: 901.4, Grid: 5. Job: 1. Date: 84/03/08 Operator: 1.  
x Total Field (Gauss/m) 0 -8 20 -4 40 -0 + 60 4 80 8 100  
o Gradient (Gauss/m) -8 20 -4 40 -0 + 60 4 80 8 100  
Station MagFld Grad  
0. 28516.6 -17.2 : o x  
10. 28517.5 -18.1 : o x  
20. 28518.3 -15.3 : o x  
30. 28513.3 -17.9 : o x  
40. 28519.0 -18.0 : o x  
50. 28514.9 -18.2 : o x  
60. 28515.9 -17.3 : o x  
70. 28512.3 -19.3 : o x  
80. 28518.6 -18.3 : o x  
90. 28514.9 -18.3 : o x  
100. 28514.9 -18.3 : o x  
110. 28515.5 -18.6 : o x  
120. 28516.2 -15.6 : o x  
130. 28515.2 -19.7 : o x  
140. 28516.7 -15.4 : o x  
150. 28517.8 -15.7 : o x  
160. 28514.5 -19.8 : o x  
170. 28513.6 -18.6 : o x  
180. 28512.4 -19.2 : o x  
190. 28515.2 -15.1 : o x  
200. 28514.4 -17.9 : o x  
210. 28513.3 -18.5 : o x  
220. 28521.6 -16.4 : o x  
230. 28517.0 -17.3 : o x  
240. 28516.1 -21.5 : o x  
250. 28519.9 -15.5 : o x  
260. 28513.8 -20.9 : o x  
270. 28514.6 -19.4 : o x  
280. 28519.0 -18.8 : o x  
290. 28515.9 -19.7 : o x  
300. 28516.0 -17.1 : o x  
310. 28511.3 -21.9 : o x  
320. 28515.1 -16.6 : o x  
330. 28514.9 -14.6 : o x  
340. 28518.0 -14.8 : o x  
350. 28515.4 -14.7 : o x  
360. 28516.0 -17.0 : o x  
370. 28515.4 -19.2 : o x  
380. 28513.5 -18.9 : o x  
390. 28517.7 -18.9 : o x  
400. 28514.6 -15.6 : o x  
410. 28517.3 -16.1 : o x  
420. 28516.8 -17.5 : o x  
430. 28517.9 -16.1 : o x  
440. 28516.8 -19.5 : o x  
450. 28516.5 -19.0 : o x  
460. 28514.8 -18.0 : o x  
470. 28518.8 -19.9 : o x  
480. 28517.0 -17.9 : o x  
490. 28514.9 -17.0 : o x

SCINTREX U1.2 Gradiometer  
Base Field 28500.0 \*Uncorrected Data Ser No: 2774.  
Line: 901.5, Grid: 5. Job: 1. Date: 84/03/08 Operator: 1.  
x Total Field (Gauss/m) 0 -8 20 -4 40 -0 + 60 4 80 8 100  
o Gradient (Gauss/m) -8 20 -4 40 -0 + 60 4 80 8 100  
Station MagFld Grad  
0. 28516.6 -17.2 : o x  
10. 28516.5 -17.8 : o x  
20. 28516.5 -17.1 : o x  
30. 28517.0 -16.3 : o x  
40. 28516.2 -15.6 : o x  
50. 28515.2 -19.7 : o x  
60. 28516.7 -15.4 : o x  
70. 28517.8 -15.7 : o x  
80. 28514.5 -19.8 : o x  
90. 28513.6 -18.6 : o x  
100. 28512.4 -19.2 : o x  
110. 28515.2 -15.1 : o x  
120. 28514.4 -17.9 : o x  
130. 28513.3 -18.5 : o x  
140. 28521.6 -16.4 : o x  
150. 28517.0 -17.3 : o x  
160. 28516.1 -21.5 : o x  
170. 28519.9 -15.5 : o x  
180. 28513.8 -20.9 : o x  
190. 28514.6 -19.4 : o x  
200. 28519.0 -18.8 : o x  
210. 28515.9 -19.7 : o x  
220. 28516.0 -17.1 : o x  
230. 28511.3 -21.9 : o x  
240. 28515.1 -16.6 : o x  
250. 28514.9 -14.6 : o x  
260. 28518.0 -14.8 : o x  
270. 28515.4 -14.7 : o x  
280. 28516.0 -17.0 : o x  
290. 28515.4 -19.2 : o x  
300. 28513.5 -18.9 : o x  
310. 28517.7 -18.9 : o x  
320. 28514.6 -15.6 : o x  
330. 28517.3 -16.1 : o x  
340. 28516.8 -17.5 : o x  
350. 28517.9 -16.1 : o x  
360. 28516.8 -19.5 : o x  
370. 28516.5 -19.0 : o x  
380. 28514.8 -18.0 : o x  
390. 28518.8 -19.9 : o x  
400. 28517.0 -17.9 : o x  
410. 28514.9 -17.0 : o x

SCINTREX U1.2 Gradiometer  
Base Field 28500.0 \*Uncorrected Data Ser No: 2774.  
Line: 901.6, Grid: 5. Job: 1. Date: 84/03/08 Operator: 1.  
x Total Field (Gauss/m) 0 -8 20 -4 40 -0 + 60 4 80 8 100  
o Gradient (Gauss/m) -8 20 -4 40 -0 + 60 4 80 8 100  
Station MagFld Grad  
0. 28516.6 -20.7 : o x  
10. 28516.9 -17.1 : o x  
20. 28514.6 -17.7 : o x  
30. 28513.7 -16.4 : o x  
40. 28516.9 -15.1 : o x  
50. 28516.3 -14.9 : o x  
60. 28511.4 -19.8 : o x  
70. 28515.0 -16.1 : o x  
80. 28514.0 -17.1 : o x  
90. 28514.0 -15.9 : o x  
100. 28511.6 -18.6 : o x  
110. 28513.2 -15.9 : o x  
120. 28517.3 -16.1 : o x  
130. 28513.1 -17.0 : o x  
140. 28517.9 -16.2 : o x  
150. 28516.6 -14.7 : o x  
160. 28513.4 -18.5 : o x  
170. 28514.3 -17.6 : o x  
180. 28512.8 -18.0 : o x  
190. 28512.2 -20.0 : o x  
200. 28511.7 -20.2 : o x  
210. 28510.6 -15.7 : o x  
220. 28514.9 -16.9 : o x  
230. 28514.4 -15.2 : o x  
240. 28516.1 -21.6 : o x  
250. 28514.0 -18.8 : o x  
260. 28514.8 -17.9 : o x  
270. 28514.3 -21.1 : o x  
280. 28516.4 -16.5 : o x  
290. 28513.1 -21.2 : o x  
300. 28516.4 -15.8 : o x  
310. 28517.2 -14.7 : o x  
320. 28512.8 -19.5 : o x  
330. 28514.5 -17.5 : o x  
340. 28514.9 -18.1 : o x  
350. 28517.7 -17.0 : o x  
360. 28514.7 -17.7 : o x  
370. 28512.8 -18.1 : o x  
380. 28519.9 -17.4 : o x  
390. 28517.7 -18.0 : o x  
400. 28515.8 -17.7 : o x  
410. 28516.2 -14.2 : o x  
420. 28515.9 -15.8 : o x  
430. 28515.2 -14.8 : o x  
440. 28515.4 -15.0 : o x  
450. 28516.5 -18.1 : o x  
460. 28514.7 -20.5 : o x  
470. 28516.8 -18.7 : o x  
480. 28513.9 -18.0 : o x  
490. 28515.1 -19.3 : o x  
500. 28515.8 -19.5 : o x  
510. 28514.1 -19.8 : o x  
520. 28518.1 -18.0 : o x  
530. 28513.7 -13.0 : o x  
540. 28517.7 -15.3 : o x  
550. 28520.3 -15.3 : o x  
560. 28513.7 -18.8 : o x  
570. 28515.4 -17.7 : o x  
580. 28517.2 -18.1 : o x  
590. 28515.7 -18.1 : o x  
600. 28517.0 -15.9 : o x  
610. 28515.3 -18.8 : o x  
620. 28518.7 -15.4 : o x  
630. 28519.6 -16.8 : o x  
640. 28517.5 -19.7 : o x  
650. 28517.5 -17.0 : o x  
660. 28518.7 -19.4 : o x  
670. 28519.7 -14.6 : o x  
680. 28518.2 -16.2 : o x  
690. 28519.7 -14.6 : o x  
700. 28518.8 -16.2 : o x  
710. 28518.2 -17.3 : o x  
720. 28519.9 -18.0 : o x  
730. 28519.9 -18.1 : o x  
740. 28514.6 -19.0 : o x  
750. 28519.4 -17.3 : o x  
760. 28519.2 -13.6 : o x  
770. 28518.2 -19.5 : o x  
780. 28522.5 -14.5 : o x  
790. 28514.8 -21.5 : o x  
800. 28516.6 -16.5 : o x  
810. 28518.6 -19.8 : o x  
820. 28518.6 -19.5 : o x  
830. 28516.2 -19.8 : o x  
840. 28518.6 -19.1 : o x  
850. 28517.7 -15.6 : o x  
860. 28519.8 -18.5 : o x  
870. 28514.6 -18.0 : o x  
880. 28520.1 -16.2 : o x  
890. 28520.1 -16.3 : o x  
900. 28517.9 -18.9 : o x  
910. 28518.6 -17.9 : o x  
920. 28519.6 -15.4 : o x  
930. 28517.7 -14.9 : o x  
940. 28518.4 -18.1 : o x  
950. 28518.4 -18.1 : o x  
960. 28520.9 -14.7 : o x  
970. 28518.1 -16.9 : o x  
980. 28519.5 -13.6 : o x  
990. 28515.0 -18.2 : o x  
1000. 28519.4 -16.4 : o x  
1010. 28521.1 -17.7 : o x  
1020. 28519.5 -18.2 : o x  
1030. 28521.1 -17.3 : o x  
1040. 28519.5 -17.3 : o x  
1050. 28517.1 -19.0 : o x  
1060. 28517.5 -17.4 : o x  
1070. 28519.5 -18.0 : o x  
1080. 28519.7 -15.0 : o x  
1090. 28516.8 -15.1 : o x  
1100. 28518.4 -16.4 : o x  
1110. 28518.7 -16.9 : o x  
1120. 28522.2 -18.4 : o x  
1130. 28518.0 -15.9 : o x  
1140. 28512.0 -18.0 : o x  
1150. 28519.2 -18.5 : o x  
1160. 28518.5 -15.9 : o x  
1170. 28514.1 -20.6 : o x  
1180. 28518.5 -18.4 : o x  
1190. 28514.1 -20.6 : o x  
1200. 28515.2 -16.9 : o x  
1210. 28520.9 -18.4 : o x  
1220. 28517.9 -18.0 : o x  
1230. 28514.2 -21.6 : o x  
1240. 28517.9 -12.9 : o x  
1250. 28518.2 -17.4 : o x  
1260. 28519.2 -18.7 : o x  
1270. 28517.6 -15.0 : o x  
1280. 28513.9 -18.3 : o x  
1290. 28519.5 -17.3 : o x  
1300. 28516.1 -16.2 : o x  
1310. 28512.4 -20.3 : o x  
1320. 28517.7 -19.0 : o x  
1330. 28516.7 -16.4 : o x  
1340. 28519.3 -15.9 : o x  
1350. 28519.3 -15.9 : o x  
1360. 28517.7 -15.0 : o x  
1370. 28515.7 -14.1 : o x  
1380. 28515.4 -17.2 : o x  
1390. 28517.6 -18.7 : o x  
1400. 28515.2 -18.7 : o x  
1410. 28514.8 -17.4 : o x  
1420. 28515.4 -16.0 : o x  
1430. 28517.9 -19.2 : o x  
1440. 28515.9 -17.2 : o x  
1450. 28513.3 -17.1 : o x  
1460. 28516.3 -16.8 : o x  
1470. 28512.5 -15.1 : o x  
1480. 28517.1 -20.1 : o x  
1490. 28512.1 -19.0 : o x  
1500. 28514.7 -20.7 : o x  
1510. 28514.3 -19.9 : o x  
1520. 28515.1 -18.6 : o x  
1530. 28510.1 -20.4 : o x  
1540. 28516.8 -16.3 : o x  
1550. 28516.2 -19.1 : o x  
1560. 28513.2 -20.4 : o x  
1570. 28515.3 -17.0 : o x  
1580. 28514.0 -17.7 : o x  
1590. 28517.1 -18.8 : o x  
1600. 28517.1 -18.2 : o x  
1610. 28511.1 -16.9 : o x  
1620. 28517.2 -16.9 : o x  
1630. 28515.3 -18.1 : o x  
1640. 28516.0 -15.4 : o x  
1650. 28514.6 -17.9 : o x  
1660. 28512.4 -20.3 : o x  
1670. 28512.6 -20.2 : o x  
1680. 28514.9 -15.0 : o x  
1690. 28513.6 -17.5 : o x  
1700. 28517.9 -13.6 : o x  
1710. 28516.2 -19.4 : o x  
1720. 28513.1 -18.8 : o x

SCINTREX U1.2 Gradiometer  
Base Field 28500.0 \*Uncorrected Data Ser No: 2774.  
Line: 901.7, Grid: 5. Job: 1. Date: 84/03/08 Operator: 1.  
x Total Field (Gauss/m) 0 -8 20 -4 40 -0 + 60 4 80 8 100  
o Gradient (Gauss/m) -8 20 -4 40 -0 + 60 4 80 8 100  
Station MagFld Grad  
0. 28516.6 -15.2 : o x  
10. 28514.6 -15.9 : o x  
20. 28513.3 -18.8 : o x  
30. 28517.8 -16.3 : o x  
40. 28513.2 -19.7 : o x  
50. 28514.9 -16.8 : o x  
60. 28518.5 -20.1 : o x  
70. 28513.7 -18.9 : o x  
80. 28515.1 -18.4 : o x  
90. 28514.8 -17.3 : o x  
100. 28515.9 -19.1 : o x  
110. 28515.2 -18.7 : o x  
120. 28514.9 -18.5 : o x  
130. 28510.3 -19.8 : o x  
140. 28511.9 -18.4 : o x  
150. 28513.6 -17.7 : o x  
160. 28516.0 -15.7 : o x  
170. 28519.8 -16.6 : o x  
180. 28515.2 -14.6 : o x  
190. 28517.5 -19.4 : o x  
200. 28513.8 -18.0 : o x  
210. 28515.1 -16.9 : o x  
220. 28513.3 -17.8 : o x  
230. 28513.2 -18.1 : o x  
240. 28511.2 -18.9 : o x  
250. 28513.0 -19.4 : o x  
260. 28514.4 -18.6 : o x  
270. 28512.9 -20.8 : o x  
280. 28514.3 -22.3 : o x  
290. 28514.8 -16.0 : o x  
300. 28512.3 -19.2 : o x  
310. 28514.6 -19.8 : o x  
320. 28517.0 -18.8 : o x  
330. 28512.8 -14.6 : o x  
340. 28512.8 -17.0 : o x  
350. 28514.9 -13.8 : o x  
360. 28516.7 -17.7 : o x  
370. 28514.4 -17.0 : o x  
380. 28515.0 -16.8 : o x  
390. 28511.3 -19.1 : o x  
400. 28515.1 -16.6 : o x  
410. 28515.9 -19.8 : o x  
420. 28514.3 -17.7 : o x  
430. 28515.7 -15.5 : o x  
440. 28517.3 -17.5 : o x  
450. 28516.1 -17.3 : o x  
460. 28518.0 -14.7 : o x  
470. 28515.5 -18.3 : o x  
480. 28511.2 -18.3 : o x  
490. 28513.9 -17.8 : o x  
500. 28513.4 -18.7 : o x  
510. 28517.2 -16.5 : o x  
520. 28517.2 -16.5 : o x  
530. 28515.1 -18.9 : o x  
540. 28514.7 -16.0 : o x  
550. 28519.4 -18.0 : o x  
560. 28515.0 -15.7 : o x  
570. 28513.4 -20.5 : o x  
580. 28514.6 -18.4 : o x

SCINTREX U1.2 Gradiometer  
Base Field 28500.0 \*Uncorrected Data Ser No: 2774.  
Line: 901.8, Grid: 5. Job: 1. Date: 84/03/08 Operator: 1.  
x Total Field (Gauss/m) 0 -8 20 -4 40 -0 + 60 4 80 8 100  
o Gradient (Gauss/m) -8 20 -4 40 -0 + 60 4 80 8 100  
Station MagFld Grad  
0. 28516.6 -20.7 : o x  
10. 28516.9 -17.1 : o x  
20. 28514.6 -17.7 : o x  
30. 28513.7 -16.4 : o x  
40. 28516.9 -15.1 : o x  
50. 28516.3 -14.9 : o x  
60. 28511.4 -19.8 : o x  
70. 28515.0 -16.1 : o x  
80. 28514.0 -17.1 : o x  
90. 28514.0 -15.9 : o x  
100. 28511.6 -18.6 : o x  
110. 28513.2 -15.9 : o x  
120. 28517.3 -16.1 : o x  
130. 28513.1 -17.0 : o x  
140. 28517.9 -16.2 : o x  
150. 28516.6 -14.7 : o x  
160. 28513.4 -18.5 : o x  
170. 28514.3 -17.6 : o x  
180. 28512.8 -18.0 : o x  
190. 28512.2 -20.0 : o x

SCINTREX V1.2 Gradiometer Base Field 28500. Ser No: 2774. Line: 000. Grid: 1. Job: 1. Date: 84/03/08 Operator: I. x Total Field (Gammas) 0 -8 20 40 -0 + 60 80 100 Station Mag Fld Grad

SCINTREX V1.2 Gradiometer Base Field 28500. Ser No: 2774. Line: 100. Grid: 4. Job: 1. Date: 84/03/08 Operator: I. x Total Field (Gammas) 0 -8 20 40 -0 + 60 80 100 Station Mag Fld Grad

SCINTREX V1.2 Gradiometer Base Field 28500. Ser No: 2774. Line: 200. Grid: 5. Job: 1. Date: 84/03/08 Operator: I. x Total Field (Gammas) 0 -8 20 40 -0 + 60 80 100 Station Mag Fld Grad

SCINTREX V1.2 Gradiometer Base Field 28500. Ser No: 2774. Line: 300. Grid: 5. Job: 1. Date: 84/03/08 Operator: I. x Total Field (Gammas) 0 -8 20 40 -0 + 60 80 100 Station Mag Fld Grad

SCINTREX V1.2 Gradiometer Base Field 28500. Ser No: 2774. Line: 400. Grid: 5. Job: 1. Date: 84/03/08 Operator: I. x Total Field (Gammas) 0 -8 20 40 -0 + 60 80 100 Station Mag Fld Grad

SCINTREX V1.2 Gradiometer Base Field 28500. Ser No: 2774. Line: 500. Grid: 5. Job: 1. Date: 84/03/08 Operator: I. x Total Field (Gammas) 0 -8 20 40 -0 + 60 80 100 Station Mag Fld Grad

SCINTREX V1.2 Gradiometer Base Field 28500. Ser No: 2774. Line: 600. Grid: 5. Job: 1. Date: 84/03/08 Operator: I. x Total Field (Gammas) 0 -8 20 40 -0 + 60 80 100 Station Mag Fld Grad

SCINTREX V1.2 Gradiometer Base Field 28500. Ser No: 2774. Line: 700. Grid: 5. Job: 1. Date: 84/03/08 Operator: I. x Total Field (Gammas) 0 -8 20 40 -0 + 60 80 100 Station Mag Fld Grad

SCINTREX V1.2 Gradiometer Base Field 28500. Ser No: 2774. Line: 800. Grid: 5. Job: 1. Date: 84/03/08 Operator: I. x Total Field (Gammas) 0 -8 20 40 -0 + 60 80 100 Station Mag Fld Grad

SCINTREX V1.2 Gradiometer Base Field 28500. Ser No: 2774. Line: 900. Grid: 5. Job: 1. Date: 84/03/08 Operator: I. x Total Field (Gammas) 0 -8 20 40 -0 + 60 80 100 Station Mag Fld Grad

SCINTREX V1.2 Gradiometer Base Field 28500. Ser No: 2774. Line: 1000. Grid: 5. Job: 1. Date: 84/03/08 Operator: I. x Total Field (Gammas) 0 -8 20 40 -0 + 60 80 100 Station Mag Fld Grad